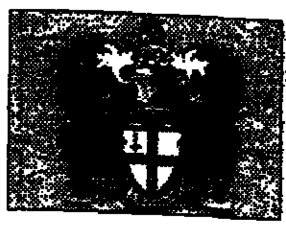

Giant beset by gnats
How London's Stock Exchange is fighting back
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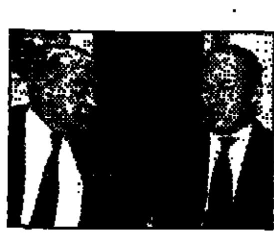

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Rowland and Bock: allies or rivals?
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Boeing's jumbo jam
Pressing problems need a long-term solution
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FINANCIAL TIMES

Europe's Business Newspaper

MONDAY OCTOBER 18 1993

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Britain warns US over unitary taxation system

Britain warned the US that it is not satisfied with the changes California has made to its system of unitary taxation and demanded a complete denunciation of the unitary method. The UK has also filed a brief to the US Supreme Court in support of a case brought by Barclays Bank of the UK against a tax assessment made by California under the unitary system. Foreign, and especially British, companies have long objected to California's system, which taxes a company on a percentage of its worldwide income rather than only on income earned in the state. Page 4

Drug imports halted: Japanese shipments of Usevir, produced by US pharmaceuticals group Bristol-Myers Squibb and the only effective competitor to Zovirax, Wellcome's herpes and shingles treatment, have been halted following three deaths among patients. Page 17

BBC sues News Corporation: BBC World Service Television has issued a writ against Rupert Murdoch's News Corporation after Mr Murdoch's lawyers threatened to terminate the corporation's 10-year contract with the Murdoch-controlled Star TV system in Asia. Page 16

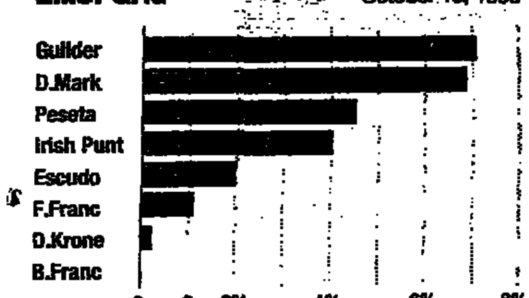
EC to ban US blood imports: The EC is planning measures which would restrict and eventually ban imports of American blood plasma and plasma products, which are currently worth $650m a year. Page 16

Bid to close enlargement gap: The European Commission has started to produce ideas to bridge the political gap between the EC and the four Nordic and Alpine countries seeking to join the Community. Page 2

Russia admits dumping nuclear waste: Moscow confirmed a Russian tanker was dumping low-level nuclear waste into the sea north of Japan, but said international authorities had been informed of the move beforehand. Page 6

European Monetary System: The Belgian franc has replaced the Danish krone at the bottom of the EMS system following heavy selling of the Belgian currency against the D-Mark. The disparity between the lowest currency and the Dutch guilder at the top of the ladder is 6.87 per cent, still well below the new fluctuation limit established after the European exchange rate crisis at the beginning of August. Currencies, Page 29; Belgian governor attacks franc 'rumours', Page 2

EMS: Grid October 15, 1993



The chart shows the member currencies of the exchange rate mechanism measured against the weakest currency in the system. Most of the currencies are permitted to fluctuate within 15 per cent of agreed central rates against the other members of the mechanism. The exceptions are the D-Mark and the guilder which move in a 2.25 per cent band.

Trafalgar House, UK-based construction, engineering and shipping group, is expected to announce today that chief executive Allan Gormly, is stepping down. He will be replaced by Nigel Rich, outgoing managing director of Jardine Matheson. Trafalgar will also announce a rights issue of up to £400m ($604m). Page 17

US may act on Haiti: The US has not ruled out military intervention in Haiti to protect American lives and restore democracy, President Bill Clinton's ambassador to the United Nations said. Page 4

UK tops cross-border league: Britain is top of the European cross-border takeover league, with UK companies completing more acquisitions in Europe than their counterparts in any other country during the first nine months of the year. Page 17

Bhutto strengthens hold: Benazir Bhutto's nominee, Yusuf Raza Gillani, became speaker of the lower house of the Pakistani parliament, strengthening her attempt to become prime minister again. Page 6

South African unions call strike: The Congress of South African Trade Unions has called a national strike for November 15 to protest against the treatment of workers' rights in the draft constitution. Page 7

BNP shares reach market: Shares in Banque Nationale de Paris, the bank spearheading the French government's privatisation programme, are expected to rise to a premium when they start trading today. Page 20

NatWest Bancorp, US retail banking subsidiary of Britain's National Westminster Bank, reported net income up 82 per cent to $71.5m for the third quarter. Chairman and chief executive John Tugwell said: "All we need now is for the economy to improve." Page 18

Money costs money: It costs the British £800m ($1.2bn) a year in lost interest income to carry around banknotes and coins according to the first detailed study for 20 years of the costs of circulating cash around the economy. Page 8

Austria	Sch30	Greece	Dr300	Lux	LFr65	Qatar	QR12.00
Bahrain	Din1.250	Hong Kong	HK$18	Malta	Lm0.60	S.Arabia	SR11
Belgium	BFr65	Hungary	Ft185	Morocco	MDh13	Singapore	S$4.10
Bulgaria	Lv25.00	Iceland	IKr215	Neth	Fl 3.75	Slovak Rp	KSL45
Cyprus	C£1.00	India	Rs40	Nigeria	Naira45	South Africa	R12.00
Czech Rp	CZK45	Israel	Shk5.80	Norway	NKr16.00	Spain	Pta210
Denmark	DKr15	Italy	L2700	Oman	OR1.50	Sweden	SKr15
Egypt	E£4.50	Japan	Y500	Pakistan	Rs35	Switz	SFr3.20
Finland	FM12	Jordan	JD1.50	Philippines	Pso45	Syria	S£50.00
France	FFr9.00	Kuwait	Fils.600	Poland	Zl 22,000	Tunisia	Din1.250
Germany	DM3.30	Lebanon	US$1.25	Portugal	Es215	Turkey	L8000
						UAE	Dh11.00

Clinton concedes policy errors over Somalia

By Jurek Martin in Washington

US PRESIDENT Bill Clinton and Mr Warren Christopher, his secretary of state, conceded over the weekend that their conduct of foreign policy had not been free of error, especially in Somalia.

But both, in interviews with the Washington Post, resisted suggestions that the administration's foreign policy team needed shaking up or that the president should reduce his concentration on domestic issues.

Both also had harsh words for western Europe. On Bosnia, for example, Mr Clinton observed "I had the feeling that the British and the French felt it was far more important to avoid lifting the arms embargo than to save the country."

Mr Christopher responded sharply to an editorial in last week's Economist magazine calling for his removal also by citing Bosnia. Such "blame America" rhetoric, he said, stemmed from the US "not having resolved the problem that Europe failed to resolve itself".

More generally, he added that he thought official Washington had been for too long too "Euro-centric" and that "western Europe is no longer the dominant area of the world ... there is a lot of criticism coming from western Europe but I don't see or hear it coming from Asia."

Mr Clinton noted three areas where the foreign policy record might have been better: failing to engage the American public more in explaining the US role in the post-cold war world; allowing US soldiers to serve under UN command; and letting diplomatic efforts in Somalia languish over the summer.

Mr Christopher said it was "probably an error" not to have reviewed US policy in Somalia when United Nations peace-keepers began getting killed. The UN, he argued, "is not a bureaucracy you can turn things over to and depend on".

In fact the state department is so unhappy with the performance of Mr Boutros Boutros-Ghali, the UN secretary-general, that it is attempting to dissuade him from visiting Somalia this week as planned. It fears his presence might jeopardise the fragile ceasefire between the UN and the forces of General Mohammed Farah Aideed.

Although in a self-critical mood, Mr Clinton doubted that a more intense "national dialogue" in foreign policy would necessarily have made any difference.

Haiti intervention not ruled out, Page 4

Threat to 400,000 jobs in EC auto sector

Study finds 'alarming' gap in productivity with Japan

By Kevin Done, Motor Industry Correspondent, in London

MORE THAN 400,000 jobs are likely to be shed in the European Community's automotive components industry by 2000, according to a confidential report prepared for the European Commission.

EC producers have failed to close an "alarming gap" in productivity in recent years, says the study, which claims European components makers achieve only a third of the productivity of Japan's industry.

The report, The Evolving Competitive Challenge for the European Automotive Components Industry, has been prepared by the Boston Consulting Group for the EC industry directorate.

It suggests employment in EC automotive components groups – now around 940,000 – "is likely to decline by at least 40 per cent up to 1999". Such a reduction would be necessary to close only half the current productivity gap.

This would be the "absolute minimum for the industry to be viable after 1999", says the report.

The study, which has been circulated among leading European components producers, was ordered by the Commission as part of its investigation into the competitiveness of the European auto industry. Its findings are due to be presented to a meeting of the EC Council of Industry Ministers in mid-November.

The European motor industry is already in turmoil, as vehicle makers and components suppliers seek to restructure to cope with the deep recession and the growing long-term challenge from producers in Japan and the US.

Many leading European vehicle makers such as Volkswagen, Peugeot and Fiat, and components makers such as Robert Bosch, Mannesmann and Magneti Marelli are in loss and are cutting their workforces.

The competitiveness of the components sector is vital to the future success of European vehicle makers, as components bought from outside suppliers often account for 60-70 per cent of a car's final cost.

The report says the structure of the EC components industry "is likely to change radically" with a clear movement to a tiered structure similar to that in Japan.

"A concentration of first-tier suppliers to around 500 principal ones in Europe is probable, with only between two and six main competitors in the EC for most key sub-systems," it says.

The number of companies operating as second or third-tier suppliers may fall by up to a third, warns the study.

Individual carmakers have

Tough time for car parts sector, Page 4
Observer, Page 15

Two Cossack delegates vote at the meeting of the Russia's Choice party, formed in Moscow by supporters of President Boris Yeltsin to contest the December 12 elections. Deputy prime minister Sergei Shakhrai set up the rival Party of Russian Unity and Accord Report, Page 16 Reuter

Bonn to ignore EC quota for cereals

By David Gardner in Brussels and Quentin Peel in Bonn

BONN is refusing to abide by European Community limits on the amount of land which can be sown with cereals in eastern Germany, threatening a bruising row between Germany and the EC at a meeting of agriculture ministers today.

A senior Commission official said Bonn's militancy on agriculture threatened to unravel the Common Agricultural Policy reform, break budgetary limits Bonn is constantly urging on Brussels and further complicate Gatt talks already on the brink over the farm issue.

The dispute was ignited because the east German Länder have exceeded by nearly 10 per cent the area they are entitled to plant. Under last year's reform of the CAP, which introduced big price cuts and production restraints to rein in oversupply, budgetary outlays, and to try to make possible a Gatt farm trade agreement, the former east Germany was given a "base area" eligible for EC price support of 3.6m hectares. This has been overshot by 347,000 hectares.

The Commission, interpreting the rules flexibly to allow for the prostration of the eastern German economy, proposed phasing in the automatic penalties for exceeding the planted area.

Brussels proposes that instead of facing a 10 per cent reduction in aid next year, the normal penalty for cultivating 10 per cent too much land, an immediate reduction of only 1 per cent will be imposed. As for the excess land, the Commission says 10 per cent must be taken out of production next year, 20 per cent in 1995, 50 per cent in 1996 and 100 per cent in 1997.

The Commission's concession will cost an extra Ecu85m ($99m) to an Ecu36bn farm budget already in danger of exceeding its legal ceiling.

Germany responded on Friday by saying it would not respect this compromise, and would compensate its farmers for any penalties from national funds.

Bonn says the original calculation of the "base area" in east Germany, made by Brussels in 1992, was incorrect, by failing to include some 180,000 hectares of land devoted to maize.

Mr Jochen Borchert, the German agriculture minister, said that Brussels had failed to allow for the extraordinary upheaval in east German agriculture. Far more land was taken out of use for livestock production than had been forecast, and the land was switched to production

Border controls, Page 2
Editorial Comment, Page 15
Sowing seeds of doubt, Page 17

Boeing may cut 747 output as industry recession bites

By Paul Betts, Aerospace Correspondent, in London

BOEING, the world's largest commercial aircraft manufacturer, may be forced to shut down one of its two 747 jumbo production lines in the face of the deep recession in the airline business.

Although the company has just delivered its thousandth 747 to Singapore Airlines, it has not won a single new order for its jumbos so far this year.

Production of 747s at the company's huge Everett facility outside Seattle has already come down from seven a month two years ago to four a month and will go down to three a month in January.

Boeing is slashing overall production rates from a peak of 39½ aircraft a month to 21 aircraft a month by the middle of next year.

Everett has inventory of $4bn aircraft, plant and equipment. The Boeing group as a whole is carrying inventory worth between $10bn and $12bn.

Mr Philip Condit, Boeing's president, said in an interview at the company's Seattle headquarters that there were no plans at present for any further production cuts but he could not rule these out in the future.

Boeing, the European Airbus consortium, and McDonnell Douglas are competing for a $6bn order for up to 60 aircraft from Saudia, the Saudi Arabian airline. The deal is likely to be the last significant airline order for several months in the deeply depressed market which has taken a heavy toll on all manufacturers.

Mr Condit said there were some "faint, positive signs" with US airlines beginning to show improved profitability and continued growth in the Asia-Pacific region where Boeing is actively seeking to sell its new 777 wide-body to Singapore Airlines.

The cut in production rates, which will see Boeing aircraft deliveries fall from 446 airliners last year to about 350 this year and probably 258 next year, coincides with heavy development spending on new products including the wide-body 777 airliner due to fly for the first time next year.

Boeing expects to spend about $1.7bn on research and development this year. Apart from the 777, the company has decided to offer a new family of 737 twin-engine airliners and is developing a cargo version of its 767 medium-sized airliner. It is also considering co-operating with Japanese manufacturers to develop an 80-seat jetliner.

Boeing is in the throes of extensive restructuring with employment falling from 132,695 at its peak in 1992 to about 116,000 by the end of this year.

Mr Condit said the company would again be reviewing its employment levels at the start of next year.

Tactics for smooth touchdown, Page 14

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 No 32,194 Week No 42

Brussels working on formulas to allay applicants' doubts

EC bid to close enlargement gap

By David Gardner in Brussels

THE European Commission has started to produce what may prove workable solutions to bridge the political gap between the 12 and the four Nordic and Alpine countries seeking to join the EC, abating growing pessimism about plans for completing enlargement by 1995.

The enlargement talks, begun in February with Austria, Sweden and Finland and two months later with Norway, must be completed by early spring at the latest to meet the January 1995 target.

Yet the real differences between the EC and the applicants – all of which will put accession to a referendum among increasingly Euro-sceptical populations – remain to be resolved.

But Brussels is now evolving formulas in sensitive areas such as environmental and health and safety standards, and agricultural and regional subsidies, which could herald a psychological breakthrough in what risked becoming a dead-end process.

By the October 29 EC summit, substantial progress is expected on aligning health and safety and veterinary standards, indirect taxation, and making candidate countries' legislation compatible with the EC's single market. At an extra ministerial meeting in Brussels on November 9, talks will start on bringing the four – all except Norway formally neutral – into the Maastricht treaty's common foreign and security arrangements, and into co-operation on such issues as terrorism, drugs and immigration.

Senior EC negotiators expect compromise packages on the environment and the single market by Christmas, and on agriculture and regional policy by the end of February.

The environment – where all four applicants feel their deep green populations will reject entry if the EC is seen to be lowering what they consider higher standards in order to remove impediments to border-free trade – "may prove to be decisive for the successful conclusion of the enlargement exercise", an internal Commission document says.

Brussels is advocating a three-pronged approach: refusing to budge, for example on car emission standards, where standards are equivalent if different; offering transitional exemptions where the EC has decided to raise standards but not yet (for example on safety belts); and to deal with the most difficult issues (such as health labelling on products or certain pesticides) by granting transitional exemptions with a review after three years – by when applicants which had persuaded their electorates would be inside the EC.

Entrants would have a full voice and vote in the review, a mechanism designed "to keep everybody's aspirations alive" a senior Commission official told the FT. In the interim they would not be allowed to use border controls to keep EC products out.

Border controls, abolished by the EC's single market, loom large in the crucial agriculture debate, where the four applicants want to continue subsidising farmers at between 25 per cent (Austria) and 100 per cent (Norway) above an already high EC average.

Ministers meet today on border controls

By Andrew Hill in Brussels

MINISTERS from nine EC countries should decide today whether it will be safe to scrap systematic passport controls at their internal frontiers from December 1.

But France, which will chair today's meeting in Paris, still appears to be uneasy about opening its borders and could block a decision, setting back efforts to end frontier controls across the Community.

At their last meeting in June, the nine signatories to the Schengen free-travel accord – all the EC members except Britain, Denmark and Ireland – agreed to abolish controls from December, if certain conditions were met.

The nine ministers must decide today whether the Schengen group has made sufficient progress in three key areas: improving checks on people coming from outside the free-travel zone; fighting drug trafficking; and linking police and immigration authorities by computer.

On Friday, Mr Alain Lamassoure, France's European affairs minister, voiced his government's continuing concern about certain elements, particularly delays in linking computer systems and strengthening checks at external frontiers.

He told the EC affairs committee of the French National Assembly that France might delay a decision until next month's ministerial meeting. Other alternatives include postponing the deadline for two months, or calling for gradual application of the Schengen accord, which came into force on October 1.

The French parliament fears abolishing controls prematurely could lead to "an increase in illegal immigration, an increase in drugs trafficking and a general weakening of security in Europe".

Schengen and European Commission officials hope Mr Lamassoure will bury his doubts in the interests of achieving unanimous agreement under his chairmanship.

Agreement would allow Mr Raniero Vanni d'Archirafi, the EC internal market commissioner, to press ahead with attempts to persuade Britain, Ireland and Denmark to abolish controls on travellers coming from other EC countries. Brussels believes that was one of the clear objectives of the single market programme, most of which came into force on January 1.

Most continental EC countries have already scrapped controls on people crossing internal land borders by train or car, but passport checks are still in place at most ports and airports, where intra-EC and international travellers mingle. Large EC airports like Brussels and Amsterdam are unlikely to meet the December 1 deadline, even if it is agreed today. They will be given time to split immigration and baggage-handling facilities for passengers from Schengen and non-Schengen countries.

Lamassoure: French concern

Belgian governor attacks franc 'rumours'

By Andrew Hill in Brussels

RECENT pressure on the Belgian franc is due to "false rumours" circulating in the foreign exchange market, according to the governor of Belgium's central bank.

Mr Alfons Verplaetse said at the weekend the franc – which last week slipped to BFr21.99 against the D-Mark – was undervalued given the fundamental strength of the Belgian economy.

Mr Verplaetse's comments were aimed at stabilising the currency at the beginning of an important week for economic and monetary policy.

A committee he heads will present a report to Mr Jean-Luc Dehaene, prime minister, tomorrow, giving the outline of a "social pact" between the government, employers and unions – the first since 1944. The report is understood to endorse the central bank's strict interest rate policy.

Mr Dehaene is known for never setting deadlines for tough negotiations but it is thought he may try to achieve a consensus by the end of the week on how to improve Belgian companies' competitiveness, reduce labour costs and cut the budget deficit.

Mr Verplaetse believes the employers and unions will either immediately sign the outline pact or allow the government to push through legislation to achieve the aims of the pact, without giving their formal approval.

He again denied at the weekend that the franc might have to be devalued. He also dismissed rumours that the 71-year-old currency association between Belgium and Luxembourg was under threat, or that the central bank's reserves were exhausted.

Both the Belgian and the French franc have been the target of speculation in recent weeks, because foreign exchange dealers believe the two countries' strict policy of maintaining interest rates and shadowing the D-Mark is unsustainable.

Berliners unimpressed by Kohl plan for 2001, the office space odyssey

CHANCELLOR Helmut Kohl's announcement last week that the federal government will complete the move from Bonn to Berlin this century should have been a cause for celebration among the capital's property developers.

But enthusiasm is hard to detect among the city's property developers. They do not take the chancellor's words seriously.

"I am very sceptical, to say the least," says Mr Mark Palmer, who, in partnership with Mr Roland Lauder, the US cosmetics heir, is investing DM1bn (£406m) in building the American Business Centre, an office complex on the site of the former Checkpoint Charlie border crossing which once divided the city. Construction is due to start in January.

"The government announced in 1991 that it would move the government. Who's to say it will not change its mind again? I am looking for some tangible evidence that this time the government will stick to its words," says Mr Palmer, a former US ambassador to Hungary and now a property developer.

There is some evidence of movement. A dozen senior staff from the federal Defence Ministry are already ensconced near the Landwekhkanal, near the centre of Berlin and conveniently close to the Berlin Philharmonic. More significantly, President Richard von Weizsäcker, will move permanently to Berlin on January 1. And the President's New Year's Ball will be held in Berlin, much to the chagrin of the civil servants on the Rhine.

But before any move can take place, the Bundestag, or lower house of parliament, has to pass the "Berlin-Bonn Gesetz" – the legal approval. This might take place over the next few weeks. Mr Frank Möller, who runs the marketing arm of the American Business Centre, believes early passage of the law is crucial.

"We got some clarity last week. But now we need the law legitimating the timetable," he says from his office overlooking the site which awaits the bulldozers and the cranes.

If the government does stick to the timetable, property developers believe it will speed up the city's building programme. Jones Lang Wootton, the UK property consultants which opened offices in Berlin and Leipzig three years ago, reckons a whole range of financial services, from banking to insurance companies will

Developers do not yet believe chancellor's pledge to move the government east, writes Judy Dempsey

accompany the move and they will need offices.

The new capital will inherit many of the old ministry buildings from the former communist regime, but offices and accommodation will be for ancillary and support staff moving to the new capital.

But Mr Sascha Hettrich, Jones Lang Wootton's Berlin manager, argues that investors must not wait for the government. "It makes no sense to wait for something that is supposed to happen in the future," he says, betraying his own sense of scepticism about the government's commitment.

Jones Lang Wootton, and many other property consultants, rushed to Berlin in the wake of German unification and snapped up prime locations in anticipation of an early move. The expectations fuelled property prices, which Mr Hettrich says increased from "zero to 100" between 1990 and 1992, its peak.

Renting a square metre of office space, without any services, cost about DM90 by last year. The market has since fallen to about DM60. "The prices are now stable and they might well remain so for some time yet," adds Mr Hettrich.

Despite the hesitation in Bonn – or what Mr Palmer calls "inertia by the bureaucrats" – private investment of over DM11bn has been poured into Friedrichstrasse. The street is a short walk from the future finance and economics ministries. Mr Hettrich estimates that over the next dozen years, demand will match supply, regardless of the move, if the recession ends soon. "Between 7m and 8m square metres of office space will be available over this period."

In the meantime, property developers fear that Mr Theo Waigel, the federal finance minister, will try to postpone the move on the grounds of cost, which swings between DM20bn and DM30bn. "I don't understand the costs. Most of the ministries are ready to move into," says Mr Palmer.

Berliners cannot understand what all the fuss is about. "I suppose the Rhinelanders want to stay in a provincial town," said Mr Heiner Konitz, a computer programmer. "But if the government does not come here, Berlin could remain a provincial city in the heart of Europe. Who wins?"

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Ten killed in Sarajevo bombardment

BOSNIAN Serbs, Croats and Moslems battled for territory across the republic yesterday and accused each other of planning large offensives, Reuter reports from Belgrade.

In Sarajevo, the Bosnian capital, a crisis centre which monitors casualties reported that 13 people had been killed and 78 wounded during the weekend. Ten were killed in the city itself, which endured its worst shelling in weeks on Saturday.

A Bosnian army commander said the artillery barrage could be a sign that Bosnian Serbs were preparing an assault on the city. UN officials have reported Serb troop movements around the city but are unsure whether the Serbs plan an offensive.

The Serbs said it was the Moslems who were trying to push forward on fronts in central Bosnia.

There were also clashes around Gracanica in the north-east, Maglaj in central Bosnia and Jablanica in the west.

In the north-western Bosnian enclave of Bihac, Bosnian Moslem government troops clashed with rebel Moslem soldiers loyal to the enclave's leader, Mr Fikret Abdic, during fighting in two villages.

Meanwhile, Moslems and Bosnian Serb officials met at Sarajevo airport yesterday to discuss a possible exchange of prisoners of war as well as relief convoys for two Moslem enclaves. Sarajevo radio said the Bosnian Serbs promised safe passage for relief convoys, even those to the enclaves of Maglaj and Tesanj.

Associated Press

Mounting toll: A woman walks among fresh graves in Sarajevo

Pyramids with giddy heights

By Hugo Dixon

LURED by the promise of multiplying their money eight-fold every three months, Romanians have flocked to the Transylvanian town of Cluj to invest their meagre savings in a scheme known as Caritas – a money-making "pyramid" scheme.

For 18 months, Caritas – run by Mr Ioan Stoica, economics graduate and former book-keeper – kept its promises, turning investors into lei millionaires and drawing more people into its net. But in the last few weeks Caritas has several times failed to pay out, hitting investor confidence.

Caritas appears to be a classic Ponzi scam, named after Mr Charles Ponzi, an Italian immigrant operating in Boston just after the first world war. He persuaded 40,000 investors to part with $15m by promising to double their money every three months.

In theory, he was using their savings to take advantage of arbitrage opportunities in international postal coupons. In practice, he was recycling the savings of new investors to pay back the earlier investors. When the scheme collapsed, Ponzi was sent to prison. He ended his days as a pauper in Rio de Janeiro.

Such financial chain letters survive only as long as investment is attracted at ever-increasing rates. In Ponzi's scheme, he had to double inflow of cash every three months. With Caritas, the promise of an even more extravagant eight-fold increase in three months implies a need to double inflow every month.

Well-run Ponzi schemes can be kept going for months or even years. But all are eventually doomed. The supply of funds cannot rise exponentially in perpetuity. It is only a matter of time before funds dry up, investors panic or authorities step in. The early investors, of course, get rich. The laggards lose their savings.

Ponzi schemes have cropped up in many parts of the world. The UK's Barlow Clowes scandal was effectively a Ponzi scam: the high dividends initial investors received were paid not by shrewd investment but by later investors' cash.

Many people in the industrialised world have the experience of being recruited to join pyramid clubs, where they stand to receive large sums of money if they can recruit yet more people to the club.

But recently there seems to have been a particularly strong appetite for "double your money" schemes in some former east bloc countries. Caritas is just the largest of a series in Romania. Serbia also appears to have spawned several.

There are various theories why such countries might be vulnerable to such schemes. One is economic deprivation, which has made people desperate to try anything to enrich themselves or merely maintain living standards. In Romania, where earnings have fallen by a third in the past three years, there are tales of pensioners sinking cash into Caritas because they saw that as the only way to meet heating and food bills.

Another theory is that societies in transition from communism to capitalism may be susceptible because they have no tradition of discriminating between sound investments and scams.

Given the size of the scheme in Romania in relation to its economy, there are dangers that its collapse could have lasting damage. Investors could be so badly burnt they lose faith in financial markets and go back to stuffing cash under mattresses, so stifling the flows of investment necessary if the economy is to grow.

MR Ioan Stoica, the owner of a Romanian money multiplying scheme which has sucked in about 3m investors and the equivalent of hundreds of millions of dollars, yesterday denied reports the scheme was about to collapse, writes Virginia Marsh in Bucharest.

"God has helped us. The circuit is strong and healthy. It will never collapse," Mr Stoica said. Several thousand people chanted their support for the scheme at a sports stadium in Cluj, the Transylvanian town where the venture is based.

Mr Stoica, who was accompanied by Mr Gheorghe Funar, the town's mayor and leader of the Romanian parliament's largest nationalist party, said queues had shortened in recent weeks because he had enlarged his computer system and employed more cashiers.

Caritas, the largest of many similar unregulated schemes in post-communist Romania, has become a national obsession since the summer. Then, tens of thousands of Romanians, encouraged by tales of Caritas millionaires and Mr Funar's backing of the scheme, descended on Cluj each week.

Mr Stoica, a former book-keeper, blamed a computer error for the four days when the scheme failed to pay out.

His profits from Caritas – believed to exceed $40m (£26.4m) – would enable him to set up a bank and a supermarket chain and could give other entrepreneurs similar opportunities, he said. "I beg you to keep investing because through Caritas we can create a middle class wealthy enough to start real privatisation in Romania."

Foca's ruined mosques testify to Serb 'victory'

By Laura Silber, recently in Foca

FOCA'S Moslem bazaar has been gutted and more than 16,000 Moslems have been killed or expelled. All but one of the nine mosques in the town situated in south-eastern Bosnia have been destroyed, although Mr Ljubo Todovic, the deputy mayor, insists the Moslems had already let them fall into disrepair.

Serbian authorities have nearly erased all traces of the centuries-old Moslem presence in the region. One of Foca's many refugees now living in Sarajevo, Suad, who fled his home town 18 months ago, no longer believes he, or any other Moslem, will return home.

"I have lost hope that I will ever go back. But I have also come to understand that a town without the people is no longer home," he said.

"When I left, I saw the Serbian symbols and flags waving all over the region which had once belonged to all of us."

Foca is one of a string of towns in eastern Bosnia taken by Serb forces in April 1992. Bosnian President Alija Izetbegovic discussed the return of Foca during discussions over the partition of Bosnia into three ethnic states.

He finally rejected the plan, however, on the grounds that it rewarded military aggression.

Mr Todovic dismisses out of hand the possibility that his town could ever be part of a Moslem state.

Escorting visiting reporters, he nervously allowed them to speak to passers-by. He nodded eagerly when one tired-looking man described life in Foca as "excellent".

Wounded on the front line, Mr Todovic no longer wears a uniform. He told a woman to "shut up, no one asked you to speak", when she complained that the people had nothing to eat.

Isolated from the outside world, Serb soldiers control checkpoints tightly.

Although local factories are back in operation, life appears bleak. The town's 30,000 Serbs, a third of them refugees, have piled stacks of wood everywhere in preparation for winter.

People no longer flash the three-fingered Chetnik salute; instead they stick out their thumbs begging for a ride.

But there is little traffic. Cars have been mostly taken over by the military; besides, there is no petrol.

"We live like cattle," said an elderly woman dressed in black, leaving the dismal vegetable market, hauling sacks of potatoes and cabbages. "The refugees come from villages bringing their animals with them. They have nowhere else to go."

But Mr Todovic believes the Serbs have won their war. He appears not to see the empty shops and the climate of fear instilled by his rulers.

LEGAL NOTICES

No. 008625 of 1993
In the High Court of Justice
Chancery Division

IN THE MATTER OF
WACE UK HOLDINGS LIMITED
and
IN THE MATTER OF
THE COMPANIES ACT 1985

NOTICE IS HEREBY GIVEN that a petition was on the 1st October 1993 presented to Her Majesty's High Court of Justice for the reduction of the capital of the above named Company from £84,382,850 to £66,888,850.

AND NOTICE IS FURTHER GIVEN that the said Petition is directed to be heard before Mr Registrar Buckley at the Royal Courts of Justice, Strand, London, WC2A 2LL on Wednesday, 27 October 1993.

Any creditor or shareholder of the Company desiring to oppose the making of an Order for the confirmation of the said reduction of capital should appear at the time of hearing in person or by Counsel for that purpose.

A copy of the said Petition will be furnished to any such person requiring the same by the under mentioned solicitors on payment of the regulated charge for the same.

DATED this 25th day of October 1993
Nabarro Nathanson
50 Stratton Street, London W1X 5FL
Solicitors for the Petitioning Company

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Rocky road ahead for EC motor parts sector

A secret report says drastic action is needed to fight off Japanese competition, writes Kevin Done

EUROPE'S automotive components industry must restructure in the 1990s to close an "alarming" competitive gap with Japan, according to a confidential report prepared for the EC Commission.

The industry, which has a crucial role in shaping the fortunes of European carmakers, is "the weak link in the European motor industry's competitiveness today", says the report. "It will be under even greater pressure in the future." The industry employs around 940,000, and has annual output worth Ecu92.7bn (£72bn).

Commissioned by the EC industry directorate from the Boston Consulting Group, the study claims that "unless drastic action is taken soon, the competitive gap in components risks widening even further".

The report says:

- Employment in the industry is likely to fall from just below 1m to around 500,000 by 1999.
- The fragmented industry will be forced to restructure and concentrate as vehicle makers drastically reduce the number of direct suppliers – by around two thirds between 1988 and 1997 – to a core of around 500 first-tier suppliers across Europe. The number of remaining supplier companies is likely to fall by a third.
- The productivity of Japanese vehicle makers is around 30 per cent higher than their European rivals but in the components sector Japanese productivity is 2.5 times greater.
- The profitability of European components manufacturers has fallen between 1988 and 1991, reflecting "the slowdown in demand, increases in capacity, reduction in prices, and the fierce competition that is accompanying the sector restructuring".

The report says the European Commission can play "a useful supporting role" in facilitating restructuring of the industry, although the main efforts must come from the companies themselves.

EC initiatives are called for in training and employment measures, in harmonising standards, in encouraging co-operation in research and development and technology, and in competition policy.

Japanese productivity is 2½ times that of European companies

The upheaval now under way most critically in the German motor industry among both vehicle makers and their components suppliers is central to the restructuring of the entire industry.

Germany alone accounts for 47 per cent of the production of the EC independent components industry (excluding production by the vehicle makers themselves), for 53 per cent of the sector's added value and for 46 per cent of employment. France accounts for 19 per cent of production, the UK for 12 per cent, Italy for 11 per cent and Spain for seven per cent.

Original equipment – components used in new vehicles – accounts for 77 per cent of the total EC components market of Ecu88.8bn. Growth in demand of 21 per cent from 1988 to 1992 has come from a small increase in vehicle production, but chiefly from moves by vehicle makers to buy more components from outside suppliers to reduce their own in-house components manufacturing, from the use of more sophisticated components in vehicles and a shift to the production of higher value vehicles.

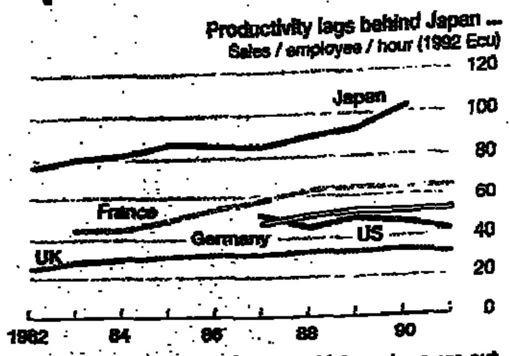
More job losses will follow those already announced this year, says the report. Several leading European vehicle makers are already demanding cost and price reductions of more than 10 per cent a year from their suppliers. "Employment is likely to decline dramatically... as the growth of consumption and production slows down and the rate of productivity by necessity accelerates."

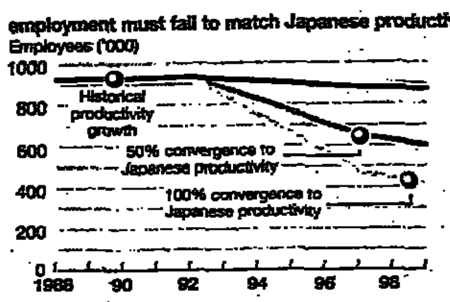
If productivity continues to grow by 4 per cent a year as in recent years, employment in the industry would be reduced by 11 per cent by the end of the decade. "However, this level of productivity growth would leave the industry hopelessly unviable at the end of the period and in danger of collapse," says the report.

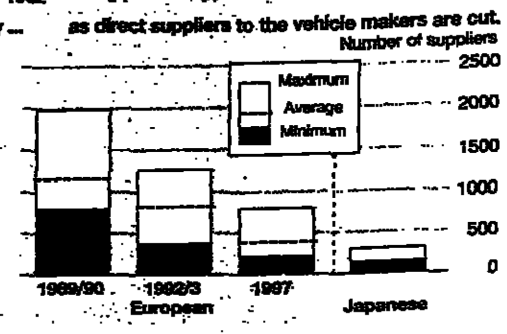
The European automotive components industry

EC automotive component production 1992

Country	Ecu bn	%
Germany	43.6	47
France	18.0	19
UK	10.8	12
Italy	10.2	11
Spain	6.9	7
Rest of EC	3.2	4
Total	92.7	100







Source: Boston Consulting Group

"If the European components industry were to reach, in 1999, the level of productivity of the Japanese industry in 1992, then employment would be reduced by 54 per cent, implying a 14 per cent per annum improvement."

Even such a drastic cut in jobs, however, would not guarantee the EC reaching parity with the Japanese industry, which has lifted productivity by 5-6 per cent a year in the last decade. The report says the productivity gap must be at least halved as "the absolute minimum necessary for the industry to be in a position to survive after 1999".

European components producers are turning over stock only 5-7 times a year on average compared with nearly 19 for their Japanese rivals.

Concentration of ownership is one of the main structural changes facing the sector. The process is being driven, says the report, by "the lack of competitiveness of many suppliers in an extremely fragmented industry", and by changes in vehicle makers' policies towards: more outsourcing and the transfer of design and development to the supplier industry; the sourcing of components to single rather than multiple suppliers; the purchasing of systems rather than individual components; and the formation of strategic buying alliances.

As the industry restructures drastically, the report says it will be transformed, having fewer but larger suppliers with a European presence; assembling systems in factories near the car plants; subcontracting non-core production to second- and third-tier suppliers, and enjoying supply contracts for the life-time of vehicles and shared R&D with vehicle makers.

From a structure based on confrontation between the vehicle makers and their suppliers, the motor industry would have to move "towards one based on partnership where profit is shared among the different players in the value chain".

UK warns US over unitary taxation

By George Graham in Washington

THE UK has warned the US that it is not satisfied with the changes California has made to its system of unitary taxation.

In a formal demarche last week to the US State Department on behalf of the EC and eight other countries Sir Robin Renwick, the British ambassador, said new Californian legislation which in effect allows foreign companies to opt out of the unitary system did not resolve the unitary tax problem.

The EC countries, together with Australia, Austria, Canada, Finland, Japan, Norway, Sweden and Switzerland, said they would not be satisfied unless the normal arm's length system of taxation was established "as the only legitimate basis of taxing foreign companies in any state".

The UK has asked the US Supreme Court to take up the issue, filing a brief in support of a case brought by Barclays Bank of the UK against a tax assessment made by California under the unitary system.

Barclays is appealing against a ruling by the California state supreme court in favour of the state tax authorities, in a test case for suits by other foreign-owned companies which could cost California $900m (£596m).

Foreign, and especially British, companies have long objected to California's system of unitary taxation, which taxes a company on a percentage of its worldwide income, rather than only on income earned in the state.

The Clinton administration last week urged the Supreme Court to ignore Barclays appeal, on the grounds that the new California legislation resolved the issue.

But the UK's lawyers argue that the Supreme Court needs to resolve the constitutional issues raised by unitary taxation, since "foreign policy issues are so directly implicated and lower state courts appear totally confused by this Court's prior pronouncements".

US stands by to intervene in Haiti

THE US has not ruled out military intervention in Haiti to protect American lives and restore democracy there, President Bill Clinton's ambassador to the United Nations said yesterday, Reuter reports from Washington.

Ms Madeleine Albright said Washington was monitoring the situation closely and was standing by to evacuate some 1,000 Americans if necessary.

"The protection of American lives is foremost in our minds," she said. "We don't rule anything in or anything out. This is a very tense situation, but one in which we have to maintain calmness about our response."

Reports from Port-au-Prince said hundreds of foreigners fled Haiti yesterday after a night of heavy gunfire in some of the capital's neighbourhoods.

The country's international airport was jammed with American and Canadian citizens who were urged to leave Haiti or take security precautions ahead of stringent UN trade sanctions which come into effect at midnight tonight New York time.

On Saturday the US embassy flew in 30 additional Marine guards and set up a telephone network to alert American citizens about potential violence.

The Canadian embassy has urged all 2,300 of its citizens to leave the country immediately.

US warships and three Canadian vessels, some visible from the capital city, will make sure that no fuel or arms are allowed to enter Haiti. The UN sanctions also include freezing the foreign bank accounts of army chief General Raoul Cedras and other military leaders.

Ms Albright said the US was still hoping that Gen Cedras would step aside and allow democratically-elected President Jean-Bertrand Aristide to return to power on October 30. Gen Cedras led the 1991 coup that ousted Mr Aristide.

Gen Cedras refused to relinquish power on Friday, as had been scheduled under a UN plan to return Mr Aristide to power.

Leading Kuwaiti oil executive quits

By Mark Nicholson in Cairo

MR Abdulrazaq Mulla Hussein has resigned as deputy chairman of the Kuwait Petroleum Corporation, the group which owns the Gulf state's oil producing and refining interests, over what appear to be differences on management strategy with Mr Ali al-Baghli, the oil minister.

News of Mr Hussein's resignation emerged in articles yesterday in two Kuwaiti dailies, Al-Qabbas and Al-Watan, and were confirmed by Kuwaitis close to the KPC.

Al-Watan quoted Mr al-Baghli as saying that "there was a difference in the points of view about how to manage the oil sector".

Other Kuwaiti sources said these differences had been festering for months within KPC, where Mr al-Baghli's style had ruffled feathers among senior management.

Mr al-Baghli, a Shia and lawyer by background, took over the Oil Ministry after last year's elections and is the first oil minister simultaneously to hold a seat in the National Assembly.

Kuwaiti sources said that many within the state-owned KPC management had felt uneasy about the way that Mr al-Baghli combined what they viewed as a largely technocratic portfolio with his desire to sustain a high political profile.

Managers, including Mr Hussein, are understood to have been particularly dismayed by several public criticisms by the minister of the group's strategy.

The Kuwaiti sources said Mr Hussein's resignation was unrelated to reports in the Financial Times about KPC's alleged role in the purchase of the Gulf state's investment in BP in the late 1980s.

Leading candidates to succeed Mr Hussein are Mr Nader Sultan, former head of Kuwait Petroleum International, and Ms Siham Rizouki, an under-secretary at the oil ministry.

Latin American leaders in trade plea to Clinton

By David Pilling in Santiago

LATIN AMERICAN leaders are to write to President Bill Clinton urging the US Congress to approve the North American Free Trade Agreement. Failure to do so, they will say, would be a bleak omen for US policy towards the continent.

The decision to send the letter, to be drafted by Chile's President Patricio Aylwin, was taken in Santiago at the weekend during a two-day summit of the Rio Group of Latin American and Caribbean states.

Leaders see Nafta as a vital first stage in building a regional trading bloc, regarded as an insurance policy against possible failure of the Gatt global trade talks. "Nafta is a first step towards creating a huge free trade zone spanning the continent," said President César Gaviria of Colombia.

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Speaker vote goes Bhutto's way

By Farhan Bokhari

THE nomination yesterday of Mr Yusuf Raza Gillani as speaker of the lower house of the Pakistani parliament, the national assembly, has strengthened Ms Benazir Bhutto's attempt to become prime minister again.

Her nominee won with a comfortable majority over his rival, Mr Gohar Ayub.

The voting confirmed Ms Bhutto's lead over Mr Nawaz Sharif, her arch rival, whose PML (Pakistan Moslem League) party was backing Mr Khan. Ms Bhutto's PPP (Pakistan People's Party) won the largest number of seats in the elections, but needs support of independents to form a majority.

"The results of the prime minister's elections will be even better. We are confident of carrying most of the parties with us," said Mr Farooq Leghari, secretary general of the PPP, after yesterday's results. The PPP is expected to gain the support of independents affiliated to neither of the two parties.

However, the two sides are still locked in battle for control of Punjab, the biggest and wealthiest province.

Talks fail to end Kashmir shrine siege

By Shiraz Sidhva in New Delhi and Farhan Bokhari in Islamabad

ARMED Kashmiri separatists besieged the Hazrat Bal shrine in Srinagar for a second day yesterday.

Late last night the militants and the Indian administration were still negotiating.

In Muzaffarabad, capital of Pakistani-controlled Kashmir, crowds of demonstrators yesterday protested in response to a raid by Indian troops on the Moslem shrine.

Young men and women shouting anti-Indian slogans marched through the the city, Pakistan's state controlled television reported last night.

The Pakistani government condemned the Indian action and called it a "grave and provocative action on the holy shrine by Indian forces on fabricated pretexts".

A foreign office announcement in Islamabad said: "This sacrilege committed against the holiest shrine in Kashmir will be deplored by civilised opinion throughout the world."

Meanwhile, some religious leaders are expected to call upon their followers today to hold peaceful demonstrations against the Hazrat bal incident. Security around Indian diplomats and diplomatic missions was expected to be tightened last night, senior officials said.

The government is also monitoring the security around a small number of Hindu temples, especially in southern Pakistan, which became the target of attack by Moslem demonstrators after last year's demolition of the Babri mosque in Ayodhya, India, by Hindu fanatics.

Army reinforcements were sent to the shrine after part of it was set on fire on Saturday afternoon, to ensure that the holy relic, believed to be a lock of the prophet Mohammed's hair, was safe.

The militants have demanded the withdrawal of the army from the area, and asked for the curfew to be lifted, so that the shrine, along with the holy relic, can be handed over to the care of the ulema, the Moslem theologians.

The government achieved a breakthough yesterday when Mr A K Suri, the inspector general of police, and Mr Wajahat Habibullah, a senior administrative official, established direct contact with the militants inside the mosque.

One person was killed in an extended gun battle between militants and the paramilitary after the area was cordoned off on Friday.

The security forces have been careful not to storm the mosque and chose to wait it out, since the use of force could lead to bloody repercussions in the valley, where an armed insurgency has been raging since 1989. The Kashmir valley experienced its worst violence in decades in 1963, when the holy relic was stolen. It was later returned.

Officials in India's home ministry are being particularly cautious about future steps because they do not want to play into the hands of militants, who may use religion to whip up more anti-India frenzy in the valley.

"We know how heavily India paid for Mrs Gandhi's decision to storm the Golden Temple (in Amritsar) in 1984," said a senior official. "We cannot afford a similar mistake in Kashmir."

Reuter

Indian troops in position as firefighters tackle a burning house beside Kashmir's holiest shrine at Srinagar

Russians admit dumping N-waste

By William Dawkins in Tokyo

RUSSIA'S environment ministry yesterday admitted that a Russian tanker was dumping nuclear waste into the ocean north of Japan. It said international authorities had been informed in advance.

Deputy environment minister Mr Amirkhan Amirkhanov said interested governments had been told about the dumping and the level of radiation in the waste was very low.

Japan said it was concerned after Greenpeace revealed that the waste was being dumped.

According to the environmental group, the Russian vessel started pumping liquid waste directly into the sea west of Hokkaido, northern Japan, yesterday morning.

The waste was mainly reactor coolant and cleaning water from the Russian Pacific fleet's dilapidated nuclear submarines, said a Greenpeace ship following the tanker. Greenpeace measured airborne radiation at around 10 times background levels around the Russian ship.

Sensitivity over environmental issues is increasing in Japan, where anxiety is especially centred on pollution imported from neighbouring countries, such as acid rain from Chinese nuclear power stations and seaborne nuclear waste from Russia.

The dumping, in apparent violation of a 1983 international moratorium over the dumping of nuclear waste at sea, could add fresh strain to sensitive relations between Japan and Russia.

It comes just a week after relations had improved, thanks to a successful visit to Tokyo by President Yeltsin.

Mr Yeltsin and Mr Morihiro Hosokawa, the Japanese prime minister, voiced "serious concern" over the ocean dumping of radioactive waste, in a joint declaration last week. They agreed to investigate nuclear dumping in the Sea of Japan by the former Soviet Union.

TV accused of poll bias

By Emiko Terazono in Tokyo

JAPANESE television, which broke with its tradition of supporting the ruling party in the July general election, could be forced to return to its old compliant ways with the launching of an investigation into alleged biased coverage.

The Ministry of Posts and Telecommunications last week started to investigate TV Asahi, a national network, on charges of intentional bias in its election coverage.

The network's executives are being questioned for violating the broadcasting laws by instructing reporters to distort its campaign coverage in a way that would help the popular reformist parties. Ministry officials say TV Asahi could face up to three months' suspension from broadcasting if it has broken the law.

The investigations come when the Japanese media, known for its cosy relationships with bureaucrats and politicians, is being questioned over its role in society. Recent coverage exposing political corruption by newspapers and television seemed to represent a new more western trend.

Although the Japanese constitution guarantees freedom of speech, the telecommunications ministry, which controls broadcasting licences, points out that broadcasting laws stipulating "political fairness" come first.

TV Asahi denies the allegations, and says its coverage is fair. There has been no public criticism over the government's probe, and the Japanese media have even denounced TV Asahi for putting the freedom of reporting at risk.

Leaders of the LDP, who have been frustrated by recent political coverage, have joined in the calls against TV Asahi.

Space agency lands ice cream deal

By Philip Rawstorne

CHINA's satellite launch and tracking control agency today fires itself into a new business orbit: selling ice-cream.

While keeping one commercial eye on outer space, the agency has for some time been tracking the advance of western consumer lifestyles into China. It has already diversified into such down-to-earth activities as running hotels and restaurants.

Now it has formed a joint venture with Allied-Lyons, the UK drinks, food and retailing group, to treat the Chinese to the delights of Baskin-Robbins ice cream.

The world's biggest ice cream chain today opens for business in Beijing where Allied-Lyons is investing $1m in four stores. Mr Tony Hales, Allied's chief executive, will perform the opening ceremony according to Chinese custom.

Baskin-Robbins – recently voted "America's Favorite Sweets Chain" for the 10th time – does not plan to commemorate the event by adding another exotic flavour to its roster of 650 recipes. Though Neil Armstrong's moon landing in 1969 was celebrated with Lunar Cheesecake.

China is the 48th country in which Baskin-Robbins has landed since then – and the Chinese will have to be content, for the time being at least, with the usual daily menu of 31 flavours to be found in any of the 3,600 shops worldwide.

These include the "sinfully rich" Kahlua 'n Cream, Jamoca Almond Fudge, and Daiquiri Ice. It would not be surprising, however, if Beijing's customers were also given a taste of Red Bean ice-cream that has been so successful in Korea, or the Green Tea flavour that has gone down so well in Japan.

Allied's market research has shown that the usual aversion of the Chinese to milk and other dairy products does not extend to ice cream. The group also expects to benefit from the laws which restrict Chinese families to one child. "It tends to make parents very indulgent."

If the stores succeed – and Allied is investing a lot of effort in staff training to establish a service culture – the group plans to build an ice cream factory in Beijing, capable of producing 2m gallons a year.

Reformers tread different roads to capitalism

BEIJING remains distinguished by bicycles, Moscow by dour Stalinist architecture, but arrival of the market economy has produced a similar atmosphere in the capitals of the two former communist superpowers. Central streets of both cities are invariably congested with traffic, street pavements are packed with unofficial market-sellers, while all around construction teams work on sites of luxury hotels and office blocks.

Governments in both capitals seem, at least at first sight, to face similar economic challenges. Both are trying to stabilise accelerating inflation by reforms which claw back power from regions. Both know reform depends on stopping the flow of central bank credits to loss-making state enterprises.

But outside the two cities these similarities in economic development fade. Moscow is ahead of other cities in outward signs of transition to a market economy. Regional centres, such as Volgograd, show little sign of private entrepreneurship other than kiosks selling western cigarettes and alcohol. Beijing, by contrast, is far from being China's most dynamic city. While Shanghai and Guangzhou in the east and south make the capital look dour and dowdy, other regional centres, such as Chengdu in the west or the northern municipality of Tianjin, also rival Beijing for colour and market-orientated activity.

Apparent similarities between economic tasks facing the Russian and Chinese governments fade just as fast. Russia is trying to stabilise inflation of 20 per cent a month, fuelled by credits to collapsing state industries. Chinese inflation is a little over 20 per cent a year because the non-state economy is growing too fast.

The same factors which account for the different pattern of regional development explain why China cannot be a role model for Russian reform, according to two Chinese economists, Yingyi Qian and Chenggang Xu. The reason, they argue, lies in very different political and economic structures which characterised the planned economies of both countries.

Economic planning in the Soviet Union was highly centralised and hierarchical. Regions specialised in particular industries, while co-ordination and control were centred in Moscow. But China's experiment with Stalinist central planning in the early 1950s was judged a failure, while Beijing had less reason than Moscow to distrust its regional governments. The result is that Chinese planning was much more less centralised – by 1978, fewer than half of state enterprises were controlled by the central government.

This decentralisation explains why China's relatively autonomous provinces have been the driving force behind reform. Freed from central controls, and keen to find tax revenue, local governments have encouraged emergence of new enterprises. The most dynamic growth has been in rural areas in the form of collective enterprises controlled by town and village administrations. By 1990, these enterprises accounted for a third of industrial output and almost 40 per cent of employment.

This growth has enabled China's economy to grow by an average 9 per cent a year since market reforms began in 1978 without attempting to reform the state industrial sector. This sector accounts for only half of output – and is shrinking each year – compared to almost all non-agricultural production in Russia. Meanwhile, decentralisation means China's remaining state manufacturing enterprises are much smaller, averaging 145 employees in 1988 compared to 806 in Russia, and less regionally specialised.

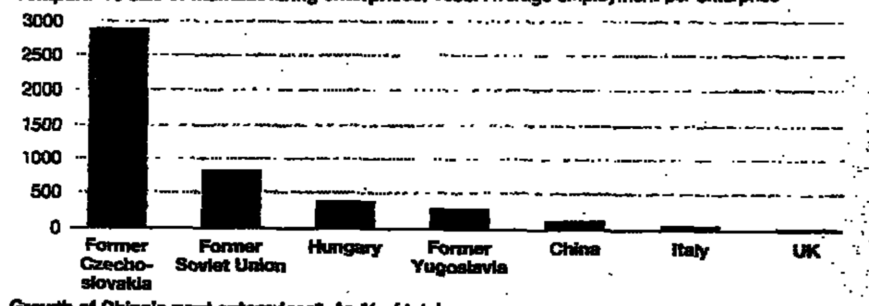
After over a decade of growth, reform and partial closure of China's remaining state enterprises look difficult but feasible. In Russia, size and regional concentration of state industry make this task more difficult. But Russia's inflation demonstrates state enterprises cannot be ignored.

Edward Balls

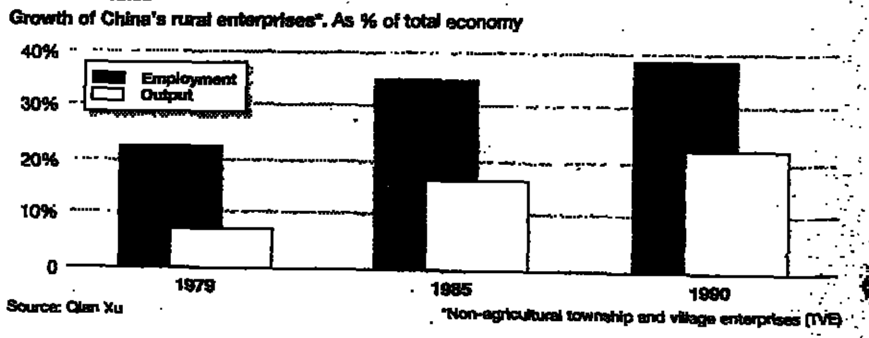
* Why China's Economic Reforms Differ, London School of Economics, Development Economics Research Porgramme. CP 25, July 1993

Decentralisation and economic reform

Comparative size of manufacturing enterprises, 1988. Average employment per enterprise



Growth of China's rural enterprises*. As % of total economy



Source: Qian Xu

*Non-agricultural township and village enterprises (TVE)

INTERNATIONAL ECONOMIC INDICATORS: BALANCE OF PAYMENTS

Trade figures are given in billions of European currency units (Ecu). The Ecu exchange rate shows the number of national currency units per Ecu. The nominal effective exchange rate is an index with 1985=100.

	UNITED STATES Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate	JAPAN Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	279.8	–174.2	–162.5	0.7823	100.0	230.8	76.0	64.5	180.50	100.0
1986	230.9	–140.6	–152.7	0.9836	80.2	211.1	96.2	86.9	165.11	124.4
1987	220.2	–131.8	–145.0	1.1541	70.3	197.3	86.1	75.5	166.58	133.2
1988	272.5	–100.2	–107.5	1.1833	66.0	219.8	80.7	66.6	151.51	147.3
1989	330.2	–99.3	–92.2	1.1017	69.4	245.3	70.5	52.4	151.87	141.9
1990	309.0	–79.3	–72.1	1.2745	65.1	220.0	50.1	28.3	183.94	126.0
1991	340.5	–53.5	–6.7	1.2391	64.5	247.4	83.1	62.9	166.44	137.0
1992	345.8	–84.1	–51.2	1.2957	62.9	254.8	101.8	89.8	184.05	142.9
3rd qtr.1992	80.6	–17.7	–12.9	1.3831	60.1	61.5	23.7	20.1	172.79	139.6
4th qtr.1992	91.5	–17.4	–16.7	1.2658	64.2	65.2	28.9	24.8	155.57	149.7
1st qtr.1993	95.1	–21.8	–18.7	1.1920	66.4	72.4	29.8	30.2	144.38	158.5
2nd qtr.1993	95.3	–25.4	–22.3	1.2069	64.3	73.4	29.0	26.3	132.76	172.4
September 1992	27.3	–8.0	n.a.	1.3786	60.2	21.1	8.2	7.2	169.05	142.5
October	29.4	–5.5	n.a.	1.3210	62.1	21.3	8.9	7.7	159.93	148.2
November	30.5	–6.3	n.a.	1.2372	65.1	22.1	9.1	9.3	153.22	150.3
December	31.8	–5.6	n.a.	1.2391	65.3	21.7	8.6	7.6	153.57	150.7
January 1993	30.9	–6.3	n.a.	1.2132	66.4	23.0	8.9	7.4	151.67	151.3
February	31.2	–6.7	n.a.	1.1839	66.7	23.9	10.5	9.4	142.87	159.2
March	33.0	–8.9	n.a.	1.1789	66.2	25.5	10.4	13.6	138.61	164.4
April	31.5	–8.3	n.a.	1.2214	64.3	24.6	9.9	9.6	137.17	167.8
May	32.0	–6.9	n.a.	1.2161	63.9	23.5	10.1	9.1	134.15	171.0
June	31.8	–10.2	n.a.	1.1833	64.5	25.4	8.9	7.6	126.97	178.2
July	32.7	–9.2	n.a.	1.1349	65.9	26.9	11.5	9.9	122.24	181.1
August	34.0	–8.6	n.a.	1.1251	65.7	26.5	9.8	8.5	116.79	188.2

	GERMANY Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate	FRANCE Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	242.8	33.4	21.7	2.2260	100.0	133.4	–3.6	–0.2	6.7942	100.0
1986	248.6	53.4	40.3	2.1279	108.8	127.1	0.0	3.0	6.7946	102.8
1987	254.3	56.8	39.8	2.0710	115.3	128.3	–4.6	–3.7	6.9265	103.0
1988	272.6	61.6	42.9	2.0739	114.6	141.9	–3.9	–3.4	7.0354	100.8
1989	310.2	65.3	52.3	2.0681	113.5	162.9	–6.3	–3.6	7.0169	99.8
1990	323.9	51.8	37.2	2.0537	119.1	170.1	–7.2	–7.2	6.9202	104.8
1991	327.4	11.2	–16.2	2.0480	117.7	175.4	–4.2	–4.9	6.9643	102.7
1992	330.8	16.9	–19.5	2.0187	121.2	182.5	4.4	2.7	6.8420	106.0
3rd qtr.1992	83.9	6.4	–8.3	2.0221	122.1	45.2	0.9	–0.4	6.8536	106.6
4th qtr.1992	82.2	3.4	–4.1	1.9593	125.0	45.7	1.1	2.2	6.6529	109.3
1st qtr.1993	77.2	4.4	–4.8	1.9476	125.6	42.8	2.4	1.6	6.6067	110.0
2nd qtr.1993			–3.3	1.9530	124.0	43.5	3.2		6.6118	109.7
September 1992	27.8	2.3	–1.7	1.9927	123.6	15.6	0.49	–0.12	6.7792	107.6
October	28.6	2.5	–1.3	1.9564	125.7	15.1	0.11	0.47	6.6368	110.0
November	28.8	0.9	–0.3	1.9634	124.0	15.1	0.05	0.27	6.6426	109.0
December	26.7	0.0	–2.5	1.9581	125.3	15.4	0.93	1.46	6.6793	108.9
January 1993	25.4	1.3	–2.7	1.9592	125.3	13.8	0.57	0.94	6.6437	109.7
February	27.5	1.5	–1.9	1.9437	125.8	14.6	0.83	0.61	6.5846	110.3
March	24.3	1.6	–0.2	1.9399	125.7	14.3	0.98	0.03	6.5919	109.9
April	25.6	1.8	–2.3	1.9483	125.5	14.3	0.89	0.25	6.5875	110.5
May	25.0	2.7	–0.8	1.9548	124.1	15.0	1.63	2.50	6.6636	109.8
June			–0.3	1.9559	122.6	14.2	0.67		6.5842	108.9
July			–4.4	1.9463	122.0				6.6299	107.0
August				1.9061	123.6				6.6761	105.3

	ITALY Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate	UNITED KINGDOM Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	103.7	–16.0	–5.4	1443.0	100.0	132.4	–5.7	4.7	0.5890	100.0
1986	99.4	–2.5	–1.4	1461.6	101.4	108.3	–14.2	0.1	0.6708	91.6
1987	100.7	–7.5	–2.1	1494.3	101.2	112.3	–16.4	–6.4	0.7047	90.1
1988	108.3	–6.9	–8.0	1536.8	97.8	120.9	–32.3	–24.4	0.6643	95.5
1989	127.8	–11.3	–17.0	1509.2	98.6	137.0	–36.7	–32.3	0.6728	92.6
1990	133.6	–9.3	–18.0	1523.2	100.6	142.3	–26.3	–23.8	0.7150	91.3
1991	137.0	–10.5	–17.1	1531.3	98.9	147.7	–14.7	–9.1	0.7002	91.7
1992	137.9	–8.0	–20.6	1591.5	95.7	145.1	–18.7	–16.2	0.7359	88.4
3rd qtr.1992	32.9	0.5	–4.9	1564.6	98.2	36.4	–4.5	–3.1	0.7261	90.9
4th qtr.1992	34.9	0.0	–3.8	1719.4	87.1	34.5	–5.4	–4.4	0.8015	79.8
1st qtr.1993	32.4	0.7	–4.0	1839.8	80.5	37.8	–4.3		0.8017	78.5
2nd qtr.1993	36.6	3.9	–4.8	1814.2	81.2	37.2	–4.6		0.7862	80.2
September 1992	11.3	–1.4	–3.1	1604.1	95.0	11.8	–1.3	–0.87	0.7428	88.2
October	12.4	0.1	–1.0	1723.8	87.3	11.5	–1.4	–1.06	0.7969	80.8
November	10.8	–1.2	–2.4	1687.0	88.7	11.4	–1.7	–1.35	0.8100	78.3
December	11.6	1.1	–0.4	1747.6	85.6	11.5	–2.4	–2.03	0.7976	80.0
January 1993	9.5	0.4	–1.8	1809.3	82.5	12.6	–1.5		0.7809	80.6
February	10.6	0.1	0.2	1833.6	80.8	12.5	–1.5		0.8179	76.8
March	12.2	0.2	–2.4	1876.4	78.5	12.5	–1.4		0.8061	78.2
April	11.7	0.0	–2.9	1871.4	79.0	12.2	–1.5		0.7894	80.5
May	12.4	2.3	–2.7	1793.2	82.2	12.4	–1.6		0.7855	80.5
June	12.6	1.6	0.8	1778.0	82.5	12.7	–1.6		0.7837	79.6
July				1798.8	80.8	12.7	–2.0		0.7585	81.3
August				1804.2	79.7				0.7545	81.0

Due to the introduction of the Single Market, EC countries are currently changing to a new system of compiling trade statistics. All trade figures are seasonally adjusted, except for the Italian series and the German current account. Imports can be derived by subtracting the visible trade balance from exports. Export and import data are calculated on the FOB (free on board) basis, except for German and Italian imports which use the CIF method (including carriage, insurance and freight charges). German data up to and including June 1990, shown in italics, refer to the former West Germany. The nominal effective exchange rates are period averages of Bank of England trade-weighted indices. Data supplied by Datastream and WEFA from national government and central bank sources.

Separatists put faith in Canada poll

By Bernard Simon in Montreal

THE presence of more than 50 Quebec separatists in Canada's House of Commons after the October 25 general election will give the independence movement an important lever to sway public opinion in the francophone province, according to the leader of the pro-sovereignty Bloc Quebecois.

Mr Lucien Bouchard said in an interview with the Financial Times that a referendum on independence would not be held in Quebec for at least two years. But he predicted the BQ's expected success in next week's election would give the separatist cause an advantage which it did not enjoy at the time of the last referendum, in 1980.

"It's quite a difference in a referendum campaign to see 75 Quebec members of the House of Commons come down and fight for federalism, and to have 50 to 55 members coming back to Quebec to fight for sovereignty," he said.

An opinion poll published over the weekend indicated the BQ remains far ahead of the Liberals and Progressive Conservatives in the province, with the support of 52 per cent of decided voters.

In the country as a whole the Liberals, who are now in opposition, have widened their lead over the Conservatives, with 40 per cent and 22 per cent of the vote respectively. The Tories' sputtering campaign received another setback on Friday when a torrent of complaints forced Prime Minister Kim Campbell to withdraw a TV advertisement which played on the partial facial paralysis of Mr Jean Chrétien, Liberal leader.

The BQ is the federal equivalent of the Parti Quebecois, which has campaigned within Quebec since the late 1960s for a loose form of sovereignty. The Bloc was formed in 1988 by a small group of breakaway Liberal and Conservative MPs angered by the unwillingness of their colleagues to make more concessions to Quebec during one of Canada's periodic constitutional wrangles.

The success of the party since then owes much to Mr Bouchard, who was a lawyer in the eastern Quebec town of Chicoutimi before entering politics. Prior to forming the BQ he was Canada's ambassador to France and a member of former prime minister Brian Mulroney's cabinet.

Responding to a suggestion that much of the BQ's support reflects voters' desire for a change after three years of tough economic times, Mr Bouchard acknowledged there was "no definitive evidence" that most Quebeckers supported sovereignty at this stage.

But he outlined a two-pronged strategy to win them over. First, the BQ would show "that sovereignists can be very responsible even in the federal parliament". Second, Mr Bouchard said Quebeckers would come to realise that they would never gain more constitutional powers within the federal system. "The door has slammed on all reasonable possibility of renewing the constitution," he said.

Mr Bouchard said the separatist movement did not threaten democracy or foreign investors' confidence in Quebec. "Everything will have to be done through the democratic process." He noted Quebec was heading support for the 1989 free trade agreement between Canada and the US. "One of the motivations of the thrust towards sovereignty is the desire to open Quebec to the world."

Reuter

Lucien Bouchard: two-pronged strategy to win over doubters

Michael Holman on a challenge for the Commonwealth

In search of common cause

THE Commonwealth's fox has been shot, its demise underlined by pictures of a beaming Nelson Mandela and a jubilant President F W De Klerk, joint winners of the Nobel peace prize.

The search for a new quarry begins in Cyprus on Wednesday, when leaders and representatives of 50 nations gather in Limassol for the organisation's biennial conference.

It will be the first time in more than two decades that South Africa need not dominate the proceedings. How to end apartheid sharply divided the Commonwealth (usually Britain from the rest); it also gave the association a sense of purpose and power, whether illusory or not.

With sanctions lifted and a general election in the offing, the Commonwealth has to refocus, say diplomats from within its ranks.

Efforts that began in Harare two years ago to find a *raison d'etre* must produce results this week they warn, or the loose association of states with little in common other than the English language and historical links with Britain will become increasingly irrelevant.

As Australia's proposed move to republican status illustrates, Commonwealth ties with the former colonial power are wearing thin. But as one senior British official made clear last week, the reverse applies. In the run-up to Limassol, British diplomats do not conceal their doubts about the wisdom of allocating five days of Prime Minister John Major's time to a conference whose merits "are not entirely self-evident", as one put it.

Past acrimonious exchanges over South Africa sanctions, as far back as the arms-to-Pretoria row in Singapore in 1971, are readily recalled.

Not even radical change in South Africa was enough to lay the sanctions issue to rest in Harare in 1991.

Britain still bears the scars. At least one African high commissioner in London detects irritation and impatience in the speech to the English Speaking Union last week by Mr Douglas Hurd, the British foreign secretary.

The South African issue had "distorted" the Commonwealth, he said.

Since it "is not an organisation with voting rights or international legal authority, these differences never got us anywhere." It only "convinced many people in Britain that the Commonwealth was an institution for lecturing Britain, and its effectiveness suffered as a result".

Commonwealth officials and delegates challenge that view, but none is likely to pursue old scores this week.

Instead they will press for a substantial Commonwealth role in South Africa's April election, assisting in the preparations and monitoring the poll.

Mr Hurd, who pointedly noted that "change lies in the hands of South Africans, not their well-wishers", will want to ensure discussion of this role does not divert attention from a broader objective for the Commonwealth, say Foreign Office officials.

Other items on the agenda are important, they acknowledge, such as the state of multilateral trade negotiations, the emergence of a "global humanitarian order", and the environment and development.

But the conference is not the best arena for action in these areas they argue: what member states can do is to put the Commonwealth house in better order. Mr Hurd himself says: "A new task is staring it in the face. Good governance and democracy cannot be imposed by imperial means." It requires a combination of persuasion and reward, and "expressions of displeasure" if democracy is undermined. "These are all characteristics of the Commonwealth, and that is where its task for the nineties could lie."

Chief Emeka Anyaoku, the Commonwealth secretary-general, would not disagree. Writing in the Commonwealth's annual report, published this month, he sees the 1991 Harare communique as a renewal of a commitment to "fundamental political values: democracy, the rule of law, just and honest government and human rights."

In the intervening two years there has been change for the better, and Commonwealth observers have monitored the transition to multi-party states in Kenya, Ghana and elsewhere.

Critics, however, note the continued reluctance to appoint a Commonwealth group to monitor and publicise human rights abuses in member states and the fact that two governments which have flouted democracy – Nigeria and Sierra Leone – will take their seats on Wednesday.

The challenge at Cyprus will be to close the wide gap that remains between the Harare principles and their practice.

Cosatu's strike call shuns ANC

By Philip Gawith in Johannesburg

THE Congress of South African Trade Unions (Cosatu), the country's largest union grouping, has called a national strike for November 15 to protest against the treatment of workers' rights in the draft constitution.

The call surprised political observers as it did not appear to have been discussed with Cosatu's partners, the African National Congress (ANC) and South African Communist Party. It would seem to indicate a determination by Cosatu, with 1.2m paid-up members, to continue as an independent voice for workers regardless of its political ties.

Mr Sam Shilowa, the group's general secretary, said at the weekend the strike would go ahead unless negotiators at the democracy talks agreed to removed a clause in the constitution guaranteeing the tenure of civil servants after the election next April, and removed a clause from the interim bill of rights enabling employers to lock out striking workers.

Cosatu believes that entrenching the positions of existing civil servants – aimed at quelling the fears of largely white incumbents – will impede democratisation of the civil service. Namibia adopted a similar policy at independence in 1990 and the large bureaucracy is proving an unmanageable fiscal burden.

Mr Shilowa said the strike had been scheduled to be held a week before the planned special sitting of parliament on November 22 which would formally pass the constitution. The talks, however, remain far from complete with important issues like regional powers, and how a government of national unity will function, undecided. The conservative Freedom Alliance is also continuing to stand outside the main negotiating process.

Mr Shilowa said the length of the strike had still to be decided.

CBI attacks EC 'red tape'

By Michael Cassell, Business Correspondent

THE Confederation of British Industry has stepped up its opposition to "the tide of increasing EC regulation" which it claims is seriously damaging European competitiveness.

In its response to the European Commission's white paper Growth, Competitiveness and Employment, the CBI today calls for a package of measures to improve European economic performance in the face of intensifying competition from newly-industrialised countries.

Publication of the CBI's views follows last week's success by the British government in winning a six-year opt-out from EC legislation intended to protect young people at work. British ministers later predicted the move could encourage multinational companies to relocate European operations in the UK.

According to the CBI, EC policy initiatives must not be allowed to make Europe less competitive by adding burdens on employers. EC regulations, it adds, should aim at simplifying procedures and reducing compliance costs.

Mr Howard Davies, CBI president, calls on the EC commission to "change the way it sees the world". He says that, despite the white paper, his organisation remains to be be convinced that there has been a change of heart in Brussels.

Mr Davis adds: "The latest noises on social policy suggest that there has not. That is why we are setting out clearly the scale of the problem".

The CBI's memorandum to M Jacques Delors, president of the European Commission, stresses that the EC has lost one-fifth of its share of world trade since 1980. It claims the position will continue to deteriorate without action to reduce costs and bureaucracy.

The employers' organisation points to rapidly rising labour and non-wage costs in Europe but emphasises that productivity growth has been inferior to its main competitors. The CBI says that high public spending and taxation within the EC have inhibited the community's ability to respond effectively to competition.

The memorandum seeks an early Gatt agreement, further development of the single market, more flexible labour markets and the lowering of the public spending and taxation, combined with a ban on any new taxes on business. All EC governments, it adds, should set a long-term goal of cutting public spending to below 40 per cent of gross domestic product.

The Lady's pages are finally for turning

By Malcolm Rutherford

THERE is a revealing comment in the early pages of Lady Thatcher's memoirs, The Downing Street Years, which is finally published today after being the subject of much recent legal debate.

She drew a different lesson from the second world war than many of her contemporaries – British or continental, left or right. Lady Thatcher concluded that the war demonstrated the need for strong nation-states. Her hostility to the European Community was there from the start: some of it extends to personal dislike of those who think otherwise.

Detachment is not the book's strong point. It is not meant to be a mark of disrespect to say that the volume it most reminds one of is Harold Wilson's memoirs of his premiership, though without some of Wilson's excellent set-pieces. Wilson, like Thatcher, wrote rapidly after leaving Downing Street. The impression left of his stewardship was of moving from one meeting, one subject, one crisis to another. Policies were governed by events.

Lady Thatcher likes to think it was different in her period; she has not demonstrated it. Possibly this is because the formula of the book is wrong. After the mildly personal introduction, she simply rattles on in more or less chronological order – from steel strike to coal strike through whatever happened in between.

The result is that practically every episode is told in truncated fashion, frequently omitting key details such as who gave advice. Many civil servants, to whom Lady Thatcher has reason to be grateful, receive no mention. Thus the tone becomes one of self-vindication: the message that she was betrayed grows stronger as the book goes on.

Not all her comments are entirely accurate. Sir Leon Brittan might complain that he has been treated less than generously. The prime minister strongly suggested there would be an early invitation to return to the cabinet after Westland. The suggestion has been written out of her history. But many of the most savage flashes are reserved for Lord Howe and, to a lesser extent, Lord Lawson towards the end of the book.

Other omissions may stem from pressure of time. When her impressions of foreign leaders come, as on Jimmy Carter, they can be perceptive, but are desperately short. About Giulio Andreotti she is not only short but plain rude. The foreign hero is Ronald Reagan, whom Lady Thatcher thinks Britain failed to appreciate.

Another volume is promised on her first 50 years. It should be more interesting because less is known about the subject. One hopes that it will also be more relaxed and less egocentric.

Thirty-one people were arrested on Saturday after violent clashes at a demonstration in south-east London to protest against racism. Sixty people were injured, including 19 police officers, after police diverted the march to stop protesters reaching a bookshop run by the far-right British National Party. Police and organisers later blamed each other for the violence. Picture: Jamie Han

Privatisation of Post Office may be shelved

By Roland Rudd

THE DEPARTMENT of Trade and Industry is to recommend that the Post Office should not be privatised, despite the conclusions of its advisers who believe a sale would not jeopardise the nationwide delivery network.

The recommendation to leave the Royal Mail – the letters division – and Post Office Counters in the public sector but with greater commercial freedom will be put to Mr Michael Heseltine, secretary of state for trade and industry, when he returns to work, possibly this week. He is not expected to overrule the department's recommendation.

The sale of Parcelforce, already announced, will still go ahead.

Kleinwort Benson, the government's adviser on the future of the service, believes a regulated, privatised Royal Mail could continue to deliver letters to every address in the UK without charging more in rural areas.

However, many ministers fear that privatisation could provoke another unwelcome split in the Conservative party, similar to the row over the break-up of British Rail. The government's slim majority would only give it a majority of about one on the committee stage of any bill privatising the Post Office, which is regarded as too small to ensure success.

The first sign of a backtrack came when Mr John Major sacked the junior industry minister Mr Edward Leigh, a strong supporter of privatisation, in his spring reshuffle.

The DTI is considering options to give the Post Office greater commercial freedom in the public sector while introducing greater competition.

Although Mr Bill Cockburn, Post Office chief executive, believes the future ownership of the corporation is up to the government, he has called on ministers to cut it loose "from the stifling cash book culture of the public sector".

Last year the Post Office contributed £80m in cash to the Treasury. This year its target contribution to the Treasury has risen to £181m, which the Post Office has described as a daunting challenge.

● The Ulster Unionist Party last night signalled that the government would have to work hard to secure its help in getting rail privatisation proposals through the House of Commons, David Owen writes.

Mr William Ross, the party's chief whip, said the party had "quite a number of concerns" about the bill, although it was too early to say how its nine MPs would vote.

Drugs budget savings sought

By David Owen

THE government is targeting the £3.4bn National Health Service drugs budget in its efforts to meet public spending targets for the next three years.

Ministers see the fast-growing NHS drugs bill as a prime area for savings.

The government has a manifesto commitment to raise year by year the "level of real resources" committed to the NHS, but ministers privately admit that the drive to reduce the £50bn public sector borrowing requirement means this year's increase is likely to be small.

The government has also said that savings generated through improved efficiency will be ploughed back into the service.

Earlier this year, it offered the drugs industry a new five-year pricing agreement for pharmaceuticals including a 2.5 per cent cut in prices for three years.

Most drugs groups – some of whom had feared price cuts of up to 7 per cent – greeted the proposals with relief. The NHS drugs bill grew last year by 14 per cent.

Mr David Blunkett, shadow health secretary, yesterday accused the government of using "sleight of hand" to give the impression it was meeting its election spending pledges on health.

He said the government was "using efficiency targets as a way of introducing cuts in the NHS, but is offering the money back as though it is additional spending."

He said the government was "introducing an accountancy sleight of hand which counts private-sector investment as though it were additional NHS spending. No one should be misled into believing that the government will fulfil its pledge to increase health service spending."

Talks aimed at setting departmental budgets until 1996-97 are to continue this week, with ministers aiming to propose a settlement to cabinet before the end of the month.

Britain in brief

UK recovery 'depends on Europe'

Britain's faltering economic recovery will remain patchy until at least 1995, unless continental Europe starts to pull out of slump, top economists warned yesterday.

Low economic growth on the Continent will limit UK companies' ability to export and will hold back the upturn.

The warning from Oxford Economic Forecasting comes after figures showing a fall in manufacturing output and a rise in inflation although there was a drop in unemployment.

This week will see new figures on retail sales, money supply, trade and the level of government debt.

The weakness of the EC economies hurts the UK because around 67 per cent of British exports go to the Continent.

Export drop offset at home

A sharp decline in exports – almost entirely due to a downturn in western Europe – has been offset by improving home markets, according to the third-quarter survey of the nine north-west England chambers of commerce.

The fragility of upturn is shown by only about 20 per cent of companies working at full capacity. The proportion of those working at three-quarters capacity improved, but only marginally, from 74 per cent to 76 per cent.

The survey – of 641 companies employing more than 100,000 people – is significant because the north-west is the UK's biggest economic contributor after south-east England.

Effort to boost language skills

The UK Department of Trade and Industry has launched a campaign to improve British exporters' language skills after a survey found that a third of small exporting British companies had missed opportunities due to linguistic barriers.

Only four per cent of Dutch companies had missed out for the same reason, while in Spain, Germany and Denmark the figures were 18, 15 and 14 per cent respectively, according to research by the Centre for Information on Language Teaching and Research.

Free local calls woo phone users

Around half of all telephone users in the UK would change their telephone company if they were offered free local calls, according to a Gallup survey carried out for the major cable television companies.

The offer of free local calls was so strong a motivator that among the respondents 48 per cent of cable TV subscribers, 50 per cent of a national sample without cable and even 40 per cent of those who already have a cable telephone said they would move to get such a concession.

Smith set to reshuffle team

Mr John Smith, leader of the opposition Labour party, is this week expected to reshuffle his shadow cabinet team after the results of the parliamentary party's annual shadow cabinet election are published on Wednesday.

Mr John Prescott, the long-serving shadow transport secretary, is being widely tipped for promotion to a key economic post, in a move that would be seen as a setback for the party's 'modernisers.'

The 18 MPs securing the most votes in this week's ballot are guaranteed a shadow cabinet place, but Mr Smith has full authority in the allocation of portfolios.

Insurer seeks early retirees

NCM, the Dutch insurance group that acquired the Export Credit Guarantee Department's short-term credit insurance business after it was privatised two and a half years ago, is seeking 70 volunteers among its 550-strong workforce in Britain to sign up for an early retirement package.

Cash handling 'costs Britain £4.5bn a year'

By John Gapper, Banking Editor

IT COSTS the British £800m a year in lost interest income to carry around banknotes and coins in wallets and handbags, according to the first detailed study for 20 years of the costs of circulating cash around the economy.

The study estimates it costs £4.5bn a year to lubricate the £250bn flow of cash payments made in Britain each year.

But the study indicates that despite the costs, Britain's cash handling system is cheaper than that of either France or Germany.

According to the report, individuals in the UK pay £800m, with a further £800m from shops and business, £700m from the Post Office, and £2.2bn by the Bank of England and commercial banks.

The study, which was carried out by the Boston Consulting Group for De La Rue, the banknote printers, estimates that the cost of cash is equivalent to £210 a year in lost interest income and handling expenses for each of Britain's 22m households.

Each household keeps an average of £460 in cash at any one time, it estimates.

The figure is thought to be so high because it is artificially boosted by the "black economy" of unregistered and criminal enterprises which deal largely in cash.

The cost of the cash handling system is found to have quadrupled since the last in-depth analysis in 1973, when it was estimated at £540m at 1992 prices.

Handling cash now costs each commercial bank between £200m and £300m a year.

One reason for the rapid escalation in costs of cash handling is that automated teller machines (ATMs) installed over the past two decades have made it easier to obtain cash, and so increased the strain on the cash distribution system.

Mr Simon Farmbrough, a Boston Consulting Group vice-president, said it was unclear how much lower the costs of cash handling could be, but there is potential "to drive down costs quite significantly."

He said the finding that the average household held £460 in cash had been checked with financial institutions because it appeared so high.

"It is clear that some of that money is being carried around in suitcases," he said.

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CONSTRUCTION

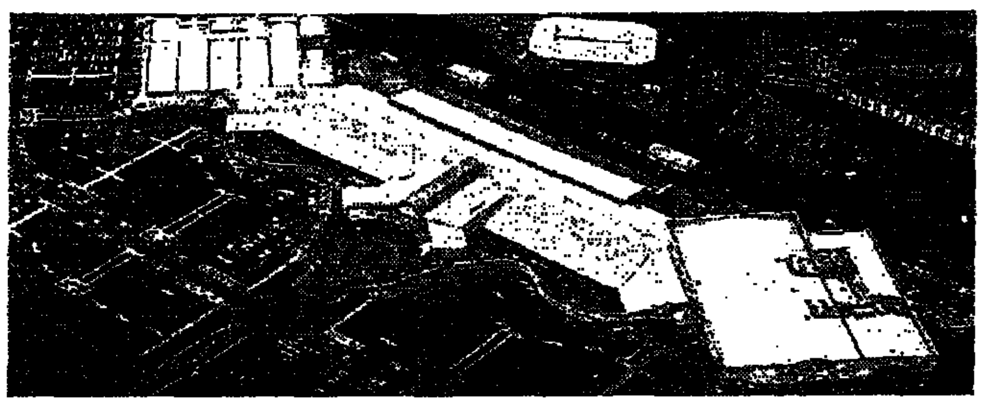
Trafalgar builds in Milton Keynes

The regional business of *TRAFALGAR HOUSE CONSTRUCTION* has secured two new contracts valued at £13m.

The largest is being carried out by the Milton Keynes office and involves a £7.5m two and three-storey steel frame extension to the western end of the Milton Keynes Shopping Centre for PosTel Property Services. It will comprise a new store for Marks & Spencer of about 135,000 sq ft, 16 smaller shops, new entrance and cross mall.

The development has been designed by architects Planning Design Development. Trafalgar House Construction has already carried out an enabling works contract at the site using its in-house ground engineering company, Cementation Piling & Foundations, to construct a basement retaining wall. The whole development is scheduled for completion by Christmas 1994.

The Boston Spa office is working on a £5.5m single carriageway by-pass around the city of Ripon in North Yorkshire. Included in the 2.9km road are two roundabouts, a single-span canal bridge, retaining walls, widening a disused railway bridge and a city centre link road.



Bovis Construction (Scotland) and Wimpey Construction (Scotland) handed over the £68m, *300,000 sq ft Gyle Shopping Centre (above)* in Edinburgh on schedule, ready for its October opening. Almost 100 per cent let, the complex provides 68 multiple occupancy units on the ground floor with anchor stores Marks and Spencer and *Safeway*. The 420-seat food court and bistro with creche facilities are located on the upper level above the main entrance.

Education work starts

Nearly £9m worth of new contracts, mostly in the education field, have been won by Mowlem South Wales of Cardiff and Llanelli, part of John Mowlem Construction.

In the Rhondda valley, Mowlem has won a £3.14m contract from Mid Glamorgan County Council education committee, to replace fire-damaged classrooms at Ferndale Comprehensive School.

At Trinity College, Carmarthen, Mowlem has been awarded a £1.5m contract to design and build two accommodation blocks for 144 students.

The blocks will contain flats with eight bedrooms, each with en suite shower room, toilet and wash basin.

Mowlem has also won work for a new £850,000 visitors' centre for Dyfed Wildlife Trust, Cardigan.

The contract involves a three-storey timber and steel framed building with walls of oak and softwood boarding, cedar shingle roof covering and a fully glazed elevation to the Valley Meadow. Completion of work is expected by Christmas.

Other contracts recently awarded include alterations to Lloyds Bank, Bridgend (£580,000); a new Job Centre in Port Talbot (£400,000); the design and construction of workshop units at Lamby Way (phase II) for Cardiff City Council (£380,000), the refurbishment of National Westminster Bank at Pontypridd (£180,000) and improvements to Wedal Road, Cardiff for Cardiff City Council (£170,000).

Store job for Tilbury

TILBURY DOUGLAS CONSTRUCTION has been awarded a £6.5m contract to build a superstore for Wm. Morrison in Warrington. The 69,000 sq ft superstore is to be built by the company's north-west regional office. The site at Wilderspool Causeway, previously occupied by Greenhall Whitley Brewery, is of historic interest, and archaeological concerns will have to be considered, particularly when excavating foundations and external pavings.

The contract includes the fitting out of the store and extensive mechanical and electrical installations.

Schools award £6.7m projects

GARDINER & THEOBALD has started work on two schools projects with a combined value of £6.75m.

Work involves the refurbishment and extension of University College School in Hampstead on behalf of the school development committee. Gardiner & Theobald Management Services is acting as project manager and Gardiner & Theobald is providing cost management advice.

The school is a listed building and the project is being constructed in two phases. Phase one involves lowering the level of the playground to create windows for the new classrooms at basement level. A changing block and sports hall will also be built.

Phase two provides additional classrooms, a library and a music centre.

Phase two is due to begin at Christmas. Gardiner & Theobald has also been appointed by Haberdashers Aske's Girls School in Elstree, Hertfordshire to build a new £750,000 music and art centre.

Gary Griffiths, partner at Gardiner & Theobald said: "The development of the design to this point involved the detailed participation of the heads of department. The demands of the national curriculum call for additional space and as the design shows students will soon be able to study in an atmosphere even more suitable for excellence."

Construction work on the project is due to start in spring next year.

Wimpey lands a runway

WIMPEY MINERALS USA INC has been awarded a \$4.8m (£3.17m) contract from the Port Authority of New York and New Jersey for runway resurfacing and maintenance at Newark International Airport. Work involves the milling down and resurfacing of one of the New Jersey airport's north-south runways and its 12 intersecting taxiways. Extensive electrical work on the lighting system is also included.

Some 1,800 tonnes of special mixes and 44,000 tonnes of bituminous concrete surface will be used in the reconstruction of the runway. Surface grades will be calculated using the latest laser equipment mounted on the paving machines.

PEOPLE

Volex goes to Dobson Park for its chief executive . . . again

Volex, the electrical interconnection products company, has found a replacement for Howard Poulson, its chief executive who was headhunted by Farnell Electronics in May. He is Oliver Chapple (right), until the beginning of August chief executive of Dobson Park Industries, the industrial electronics and mining group. Poulson himself was the main board director responsible for the industrial electronics division of Dobson Park before moving to Volex.

According to Bill Goodall, Volex chairman, Poulson is "a good strategic thinker"; he describes his replacement as having "considerable UK and overseas experience which has been both at the operational and strategic level".

Ken Hooper, the finance director, adds that Volex's strategy remains the same as it had done under Poulson, but that this year was one of consolidation and settling in the the group's recent acquisitions, particularly Icontec and Component Manufacturing Systems in the US, and Mayor, the 60 per cent-owned Singapore-based maker of data and power cord assemblies. He says the Volex board had been "disappointed" when Poulson left, but appreciated that he had moved to a group "five times our size".

Before the Dobson Park post, Chapple was group director of business development at T&N, and before that spent 20 years at Varity Corporation.

■ Do It All, the DIY chain owned jointly by Boots and W.H. Smith, has appointed David Clayton-Smith as marketing and merchandise director. He succeeds Alan Bowe who becomes business development director within the company.

Clayton-Smith, 39, joins from Courage, part of the Fosters Brewing Group, where he has been group marketing director. He starts his new job next Monday and will be responsible for corporate marketing, buying and product development.

The results of a strategic review of Do It All's operations are due to be unveiled before Christmas. Clayton-Smith will undoubtedly be at the forefront of Do It All's future operations; the business has recently been struggling, with the past year seeing a trading loss and decline in market share.

Electronic switches

■ Junkichi (Jim) Katayama has been appointed md of PANASONIC UK; he succeeds Kirk Nakamura who has been promoted to become director responsible for the Americas at Matsushita Electric Industrial.

■ Chris French, formerly director of consultancy and training at BIS, has been appointed md of ALEXANDER PROUDFOOT's information technology and engineering division worldwide.

■ James Champy (right), co-author of *Reengineering the Corporation* and formerly chairman and ceo of CSC Index, has been appointed president of CSC's commercial consulting group. David Robinson, president of CSC Index, assumes Champy's former executive responsibilities.

■ David Townsend has been appointed a member of the UK management board of DIGITAL EQUIPMENT CO as general manager personal computer business unit for the UK and Ireland. As general manager of Perrin Systems he became a director of P&P when it bought Perrin and since 1992 has been a consultant.

■ Steve Swift, md of DUN & BRADSTREET SOFTWARE UK, has been appointed senior vice-president of European operations; he succeeds Fred Newall who becomes senior vice-president customer operations, and is succeeded by Bob Flury, vice-president and general manager central manager USA.

■ Graham Hiscocks, formerly a director of R.J. Reynolds Tobacco(UK), has been appointed finance director of WATERMAN PARTNERSHIP HOLDINGS.

■ Peter McGuigan, chief executive of Speedo, has been appointed to the main PENTLAND GROUP board.

■ John Procter, formerly a regional md at McCarthy & Stone and before that group md of G-Plan, has been appointed chief executive of Stag Furniture Holdings, part of SPRING RAM, on the retirement of George Ella, who will become a non-executive director of Stag and of Regency Doors, another Spring Ram subsidiary. Roger Blaney, Stag's marketing director, has resigned.

MacDonald to head CWS funeral services

Alexander MacDonald has been made general manager of the Co-operative Wholesale Society funeral services group which, with a £60m annual turnover, now claims to be the largest wholly-owned UK funeral director. Some 640,000 funerals take place each year in the UK, 55,000 of them conducted by the CWS funeral services group.

MacDonald, 50, had been acting general manager of the group since May, having moved from being the group's operations manager for Scotland and Northern Ireland.

MacDonald joined the CWS funeral services group 10 years ago on secondment from the Industrial Society, the charitable status organisation which serves to provide managerial expertise and advice to its membership. Before joining CWS, MacDonald had a variety of management stints with companies including Distillers, Courtaulds and Cape Industries.

The CWS funeral services group is based in Glasgow, which MacDonald says reflects the historical development of the co-operative society funeral business.

Even today, 40 per cent of the Scottish funeral business is cornered by co-operative societies – including the CWS – compared with 25 per cent in the rest of the UK. There are 59 co-operative societies in the UK today, 25 of which operate their own funeral businesses, independent from that of the CWS.

MacDonald says that it is not really a macabre business but is one of the more important service industries: "You are providing a service to families at a time of considerable emotional stress, and it's only through the quality of that service that the business thrives."

THE WEEK AHEAD

ECONOMICS

French interest rates under pressure

A POOR figure for French manufacturing output in July and August this week, may intensify pressure on the French authorities to relax interest rates.

The decline in industrial production this year has been the fastest for 10 years, yet the government has held interest rates high to protect the value of the franc.

Falls in the car and household goods sectors have been mainly responsible for the sharp drop in overall output, and in recent months there have been signs that the deterioration of the two sectors is slowing. None the less, a poor figure will reinforce the case for monetary easing.

Similarly significant is this week's release of German money supply figures. The consensus puts the annualised rise of M3 in September at about 7 per cent. In August, M3 rose an annualised 7.2 per cent, boosted by the Bundesbank's foreign exchange interventions during the European exchange rate mechanism crisis of late July. Since then, the central bank appears to have made good progress in sterilising inflows of D-Marks by keeping liquidity tight. Many analysts believe M3 will come back towards the upper end of its 4.5 to 6.5 per cent target range by the end of the year.

Other highlights of the week follow. Figures in brackets are the median of forecasts from City economists compiled by MMS International, the financial information company.

Today: Japan, August industrial production, shipments; September trade balance ($12bn surplus).

UK, Parliament returns from summer recess; CBI monthly distributive trades survey; September PSBR (£5.3bn).

Canada, August manufacturing new orders (up 1.5 per cent), manufacturing shipments (up 1.8 per cent), building permits (down 1.9 per cent).

Australia, August housing (down 5.25 per cent).

Sweden, September unemployment rate (9.6 per cent).

Belgium, national bank governor presents report on social pact.

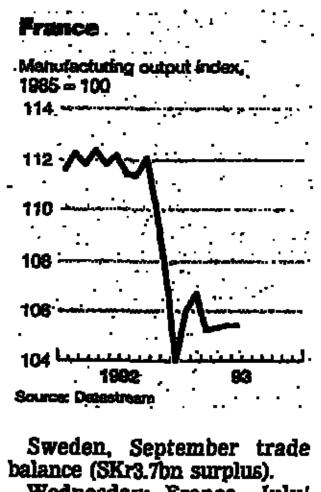
Portugal, Leon Brittan talks on trade links between Europe and US in light of GATT trade talks.

Tomorrow: US, Greenspan and FOMC voting members testify before House Banking on Fed accountability; September housing starts (1.3m), building permits; September Johnson Redbook week ending October 16.

Japan, September money supply M2+CD (up 2 per cent on year), broad liquidity.

Germany, Bundesbank October monthly report released.

UK, Chancellor speaks at annual conference of National Housing and Town Planning Council in Brighton.



Sweden, September trade balance (SKr3.7bn surplus).

Wednesday: France, July/August industrial production (down 0.1 per cent on month, down 4.1 per cent on year).

UK, September retail sales (up 0.3 per cent on month, up 2.9 per cent on year), M4 (up 0.3 per cent on month, up 4.1 per cent on year), M4 lending (up £1.8bn), bank lending figures from major banking groups, building society net new commitments (£2.5bn).

Australia, September motor vehicles registrations (down 10 per cent).

New Zealand, Q2 GDP.

Hong Kong, Sino-UK talks.

Thursday: US, initial claims week ending October 16 (333,000); state benefits w/e October 9; money supply data for w/e October 11; October Philadelphia Fed Index.

Germany, Bundesbank council meeting; Chancellor Kohl makes formal statement on economic policy in parliament.

UK, September non-EC trade (£625m deficit); British Chambers of Commerce quarterly economic survey.

Canada, September CPI (up 0.2 per cent on month, up 2 per cent on year), excluding food and energy (up 2 per cent on year), retail sales (up 0.2 per cent on month).

Australia, August manufacturing prices, import prices.

Friday: US, September Treasury budget (up $10bn).

Japan, August PCE.

UK, preliminary Q3 GDP (up 0.5 per cent on quarter, up 2 per cent on year).

During the week: Germany, September PPI (flat on month, down 0.3 per cent on year), M3 (up 6.9 per cent).

Italy, August industrial production (down 4.2 per cent on year), WPI (up 6 per cent on year), PPI (up 4.3 per cent on year); September bank lending (up 5.9 per cent), M2 (up 7.2 per cent on year); October CPI – cities (up 4.1 per cent on year).

Spain, August PPI (up 2.5 per cent on year); September budget balance (£250bn deficit).

Netherlands, September unemployment rate (5.3 per cent).

Finland, September trade balance (FM2.1bn surplus).

Emma Tucker

RESULTS DUE

ON MONDAY, Farnell Electronics, the Harrogate-based electronic components and equipment manufacturer and distributor, is expected to report interim pre-tax profits of about £18.5m, against £15.4m before exceptionals a year ago. The results will be the first for Mr Howard Poulson, Farnell's new chief executive, who arrived in August from Volex.

SmithKline Beecham, the Anglo-American healthcare group, reports third-quarter profits on Tuesday. Analysts expect pre-tax profits of about £300m, up 12 per cent on the £267m of the same period last year. The results will reflect the sale of consumer products to Sara Lee and restructuring charges. Underlying pharmaceuticals growth is expected at between 8 and 10 per cent, but analysts will be looking at the impact of reforms in Italy and Germany.

Also on Tuesday, Wolseley, the heating and plumbing distributor, is expected to report preliminary pre-tax profits of about £110m for the year to end July 31, up from £91.3m last year – a figure which surprised analysts who had been expecting £70m.

Smiths Industries, the aerospace and specialist engineering group, is likely on Wednesday to report annual profits only marginally increased from last year's total of £102m. Once again, delays in defence procurement and reductions in civilian aircraft programmes will be partly offset by the strength of the group's medical products side.

Albert Fisher, the food processing and distribution group, is expected on Thursday to report a drop in pre-tax profits to £48m (£52m) in the year to August. Mr Stephen Walls replaced the group's founder, Mr Tony Millar, as chairman last year after a traumatic year for the former stock market favourite.

UK COMPANIES

■ **TODAY**
COMPANY MEETINGS:
Armour Tst., 100 Liverpool Street, E.C., 11.00
Ferromet Grp., Cricketers Club of London, 71 Blandford Street, W., 12.00
Mid Wynd Int. Inv. Tst., 1 Rutland Court, Edinburgh, 11.00
BOARD MEETINGS:
Finals:
Ewart
Five Oaks Invs.
London & Strathclyde
Lowland Inv. Co.
MY Hldgs.
Interims:
Abtrust New Thai Inv. Tst.
Anagen
Boot (Henry)
Venturi Inv. Tst.

■ **TOMORROW**
COMPANY MEETINGS:
Raglan Property Tst., Butchers' Hall, Bartholomew Close, E.C., 10.00
SWP Grp., The Registry, Royal Mint Court, E.C., 10.30
Union Court, 20 Farringdon Road, E.C., 10.00
BOARD MEETINGS:
Finals:
IMC Inds.
McKechnie
Paterson Zochonis
Wolseley
Interims:
Bulgin (A.F.)
Edinburgh Inv. Tst.
Govett Oriental Inv. Tst.
Jerome (S.)

■ **WEDNESDAY OCTOBER 20**
COMPANY MEETINGS:
Alumasc Grp., Ironmongers' Hall, Shaftesbury Place, Aldersgate, E.C., 10.30
British Data Mngmt., Founders' Hall, 1 Cloth Fair, E.C., 11.30
Foreign & Colonial High Inc. Tst., Exchange House, Primrose Street, E.C., 12.30
Smith (W.H.), Millbank Tower, S.W., 11.30
Throgmorton 1000 Smallest Co's Tst., 155 Bishopsgate, E.C., 12.30
BOARD MEETINGS:
Finals:
Castle Comms.
Cooper (F.)
Smiths Inds.
UDO Hldgs.
Whinney Mackay-Lewis
Interims:
Alexandra Workwear
Berry Birch & Noble
British American Film
English National Inv.
Fleming Euro Fledgling
Forward Tech. Ind.
Havelock Europa
Hoare Govett Small Co's.
RIT Capital Partners
Save & Prosper Linked
St. James's Place Cap.
Wensum Co.

■ **THURSDAY OCTOBER 21**
COMPANY MEETINGS:
Close Brothers, Stationers Hall, Ave Maria Lane, E.C., 12.00
Elbief, Prince of Wales Lane, Birmingham, 11.00
BOARD MEETINGS:
Finals:
Air London
Albert Fisher
Bullers
Tweefontein United Col.
Interims:
Airflow Streamlines
Chesterfield Props.
Ferguson Intl. Hldgs.
Fleming Cont. European
London American Growth
London Atlantic Inv. Tst.
New Throgmorton Tst.
Ocean Wilsons
Parkland Textile

■ **FRIDAY OCTOBER 22**
COMPANY MEETINGS:
Black (Peter), The Brewery, Chiswell Street, E.C., 10.30
Haynes Publishing, Conference Centre, Haynes Sparkford Motor Museum, Sparkford, Somerset, 1.00
Industrial Control Services, Pontlands Park Hotel, Great Baddow, Essex, 11.00
Symonds Eng., Ware Moat House, Ware, Herts., 11.00
BOARD MEETINGS:
Finals:
Bridport-Gundry
Usborne
Interims:
Gresham House
Nokia Corp.
Value & Income Tst.

Company meetings are annual general meetings unless otherwise stated.
Please note: Reports and accounts are not normally available until approximately six weeks after the board meeting to approve the preliminary results.

DIVIDEND & INTEREST PAYMENTS

■ **TODAY**
Allied London Properties 5¾% Cv. Cm. Rd. Pf. 2.875p
Echlin $0.175
Energie Beheer Nederland 9% Nts. 1990 due 1995 $900
Forte 10.5% Mtg. Db. 1991/1996 £4.9192
Gaskell 1.5p
IMI 4.2p
Jasmine Tranche B Fltg. Rate Sec. Nts. 2003 Y1,716,458
Kleinwort Benson 6p
Kuala Lumpur Kepong M$0.05
Kyushu Electric Power Co. 10.25% 2001 C$102.50
LGW 1.6p
McAlpine (Alfred) 3p
Mori Seiki Co. 5.65% 1996 Y565,000
National Westminster Bank 9% Non-Cm. Pf. Series A 4.5p
Do. Non-Cm. Dollar Pf. Series B $0.627083
Do. Non-Cm. Pf. Series A $0.532
Nova Scotia (Province of) 11¾% Ln. 2019 £5.875
Persimmon 2.8p
State Bank of New South Wales 11% Nts. 1995 A$110
Do. 7¼% Yen-Linked Nts. 1993 A$7,250
STB Finance Cayman Gtd. Sub. Fix/Fltg. Rate Tranche A Nts. 2003 $2,864.58
Texas Instruments $0.18
United Kingdom 9¾% Cv. 2005 £4.75

■ **TOMORROW**
Barclays ADR $0.4842
Dixons ADR $0.260164
English & Scottish Investors 0.5p
Export-Import Bank of Japan 10⅝% Gtd. 1995 Ecu106.25
General Electric Co. ADR $0.142
Howard 0.5p
London Intl. ADR $0.616
Do. Lonrho ADR $0.042
Pendragon 2.4p
Practical Inv. Co. 2.49p
THORN EMI ADR $0.4398
Wells Fargo & Co. Fltg. Rate Sub. Nts. 1997 $91.04

■ **WEDNESDAY OCTOBER 20**
Boddington 2.86p
Candover Invs. 3.95p
Dixons Finance Gtd. Fltg. Rate Nts. 1997 $2,065.10
General Motors Acceptance Corp. of Canada 9¼% Nts. 1993 C$462.50
Islington Corp. 11.9% Rd. 2017 £5.95
Japan Development Bank 9⅝% Gtd. Nts. 1993 $481.25
M & G Income Inv. Tst. Income Shrs. 1p
Do. Geared Units 1p
Do. Package Units 1p
National Express 2.5p
Northern Rock Bldg. Society Fltg. Rate Nts. 1996 £155.96
Pokphand (C.P.) Co. (Bermuda Reg.) $0.00384
Do. (Hong Kong Reg.) HK$0.03
Do. (UK Reg.) $0.00384
SWP 0.2p
Wilson (Connolly) 1.27p

■ **THURSDAY OCTOBER 21**
Adecene 3.2p
Barclays Bank Undated Fltg. Rate Primary Cap. Nts. Series 3 £4,135.27
B.B.L. Intl. Gtd. Fltg. Rate Nts. 1999 $127.08
BZW Convertible Inv. Tst. 3.3p
Commonwealth Bank of Australia Gtd. Undated Cap. Nts. $171.56
Culver 0.11p
Foreign & Colonial High Income Tst. 1.42p
Latin American Extra Yield Fund Unit $0.31
Leeds Permanent Fltg. Rate Nts. 1994 £78.29
Malaysia Fltg. Rate Nts. 2015 $266.88
National Westminster Bank Undated Var. Rate Nts. $1,035
Nationwide Bldg. Society Fltg. Rate Nts. 1998 £77.98
Northern Rock Bldg. Society Fltg. Rate Nts. 1995 £77.98
Osterreichische Kontrollbank 7⅛% Dual Currency Yen/$ Gtd. Nts. 1996 Y71,250
Schroders 4p
Do. Non-Vtg. 4p
Serco 5.3p
Standard Chartered 7.5p
3i Grp. Fltg. Rate Nts. 1994 £77.98
Throgmorton 1000 Smallest Co's Tst. 2.5p
TSB 10⅝% Sub. Ln. 2008 5.3125p
United Friendly 5.5p
Do. B (Res. Vtg.) 5.5p
United Kingdom 4⅝% Index-Linked Treas. 2004 £2.2391
Wholesale Fittings 8.47p
WSP 0.9p

■ **FRIDAY OCTOBER 22**
Beatrix Mines R0.43
British-Borneo Petroleum Syndicate 2.667p
British Mohair 1.4p
Bumfield 1.65p
Chemical Banking Corp. Sub. Fltg. Rate Nts. 2003 $279.58
Church & Co. 3p
EBC 1.75p
Elsevier FL1.67
English & Caledonian Inv. 2.75p
Fosters Brewing A$0.0325
Heywood Williams 4.5p
Holt (Joseph) 11p
Home Counties Newspapers 2p
INVESCO 1p
Matthews (Bernard) 1.1p
MBE Finance Gtd. Dual Basis Bds. 2002 $10,171.88
Mid Wynd Intl. Inv. Tst. 3.6p
Mitsubishi Capital Gtd. Dual Basis Bds. 2000 $2,459.72
Parambe 0.55p
Perkins Foods 1.75p
Platinum Intl. Finance Tranche A Fltg. Rate Sec. Nts. (11) 2003 Y1,158,750
Porvair 1.4p
Reed Intl. 6p
Sanwa Australia Finance Gtd. Fltg./Fixed Rate Nts. 2003 $1,963.44
Second Alliance Tst. 26.5p
Do. 4½% Cm. Pf. £1.575
Smith (W.H.) A 9.9p
Do. B 1.98p
Smithkline Beecham ADR $0.2379
Ulster TV 6.25p
USDC Inv. Tst. 1.25p
Woolwich Bldg. Society Fltg. Rate Nts. 1996 Ecu203.49

Andrew Baxter looks at Otis's joint ventures in the former Soviet Union

Russian ups and downs

Russia may have its political problems, but there is no denying the engineering skills of its workers, according to Rudolf Kunert, senior vice-president at Otis Elevator International.

"They even found mistakes in our drawings – that shows how good they are," says Kunert of some of the liftmaker's new partners in its four Russian and one Ukrainian joint ventures.

Assessing the skills of Russian workers is just one of many management tasks facing a western company planning to move into the former Soviet Union. Otis, part of United Technologies, is well ahead of the game – its ventures, one of which started as early as 1990, *already employ about 14,000.*

The scale and breadth of these operations means that the company's experiences in the former Soviet Union have a relevance that goes beyond the lift industry.

Between them, the ventures – Shcherbinka Otis Lift near Moscow, Otis St Petersburg, Rus Otis, Mos Otis and UKR Otis in Kiev – are doing everything from manufacturing lifts and spare parts to servicing and refurbishing old Soviet-designed lifts in provincial cities.

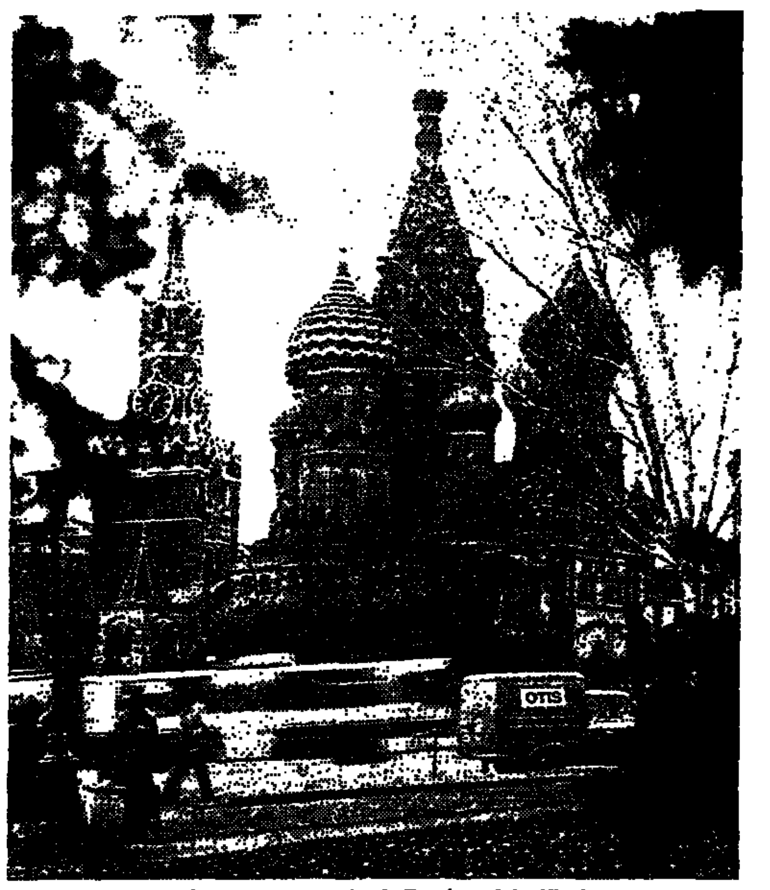
There is manufacturing on greenfield sites, as well as in existing factories that have become part of a joint venture.

Otis first developed a presence in the former Soviet Union in 1990 when it formed Shcherbinka Otis Lift with what was then a unit of the national liftmaking agency. By 1991, it had two joint ventures, and was looking to expand its presence, based on the vast market it saw for new lifts, and refurbishing and servicing of existing lifts in apartment blocks, hospitals and small offices.

Otis's thinking was that it was less likely to be affected by political upheavals than companies selling *less humdrum products. As George* David, then Otis chairman and chief executive, said in 1991: "There are lots of national events . . . but meanwhile people eat, sleep and *ride in elevators.*"

This strategy remained intact through the failed coup of summer 1991, the collapse of the old Soviet Union, and the recent upheaval in Russia culminating in President Boris Yeltsin's bloody victory over rebel parliamentarians.

The overriding messages to come out of Otis's experience are the importance of recognising both the similarities and differences between western and former Soviet workers, markets and customers and of being patient, rather than trying to force the pace of change.



Raising its profile: Otis sees a vast market in Russia and the Ukraine

Otis did not see why it should treat Russia differently from other markets in requiring the specialised approach to manufacturing that has been common for two or three decades in the west. Having made commitments to invest in Kiev, St Petersburg and Moscow, it wanted to avoid repetition, says Kunert.

Consequently, lifts are being put together in St Petersburg from electronic parts made there, from driving machines made in Moscow and doors and other parts produced in Kiev.

This is an alien concept for most of Russian industry, whose factories are used to making everything themselves. Consequently, results cannot be achieved overnight.

Now Otis has reached the point, says Kunert, where "there's something real and tangible at all five of the ventures." At Shcherbinka, for example, the first lift driving machine passed its quality test only a few weeks ago.

There are several reasons why western investors should have a realistic timetable. Organising supplies of materials and components is difficult because there are so few specialised subcontractors in Russia. "The factories have capacity, but don't have the ability to sell their capacity," says Kunert.

Producing the right mix of local and western skills in the joint ventures also takes time. According to *George Channin, Otis' area director* for eastern Europe, the Russians' engineering, scientific and maintenance skills were excellent and thus the transfer of western technology into the ventures went relatively smoothly.

"But people with skill weren't always provided with the right tools," he says. "The skills gap is greatest in management, sales and marketing and accounting."

The Otis approach has been to appoint a general manager for each venture from the staff of the local partner, and typically to have three expatriate executives. These would be a financial expert, a generalist who can work alongside the general manager and help with sales and marketing, and then – depending on whether it is a manufacturing or service joint venture – a technical or a marketing development expert. The "twin concept", where the Russian executives works with a partner/teacher, is also used. In one of the companies, for example, there are two financial managers, one expatriate and one Russian.

According to Kunert, expatriates are especially needed to help set up an organisation that goes out to sell *to the customer. "In the past, hav*ing something to distribute was a privilege – 'If you are nice to me, we'll give you something' was the rule," he says.

It clearly helps if western companies can draw on experience gained in other parts of the world, where at least some of the circumstances may have been similar. To help the joint ventures cope with inflation, for example, Otis has brought in one of its expatriate financial managers from Latin America.

The pattern, says Channin, is for Otis to start reducing the expatriate team *at the end of the second year;* in the longer term, he would expect each venture to have only one foreign executive.

Already, there are encouraging signs *indicating how the joint* ventures are coming of age. Kunert recalls how, in the early stages, Russian managers were very keen to come to the west on training courses. "Now they are saying 'Please don't put us on too many training courses, we also have to do our job here'." This self-sufficiency is being stimulated in turn by Otis. "We were a little gentle in the first year or two," says Channin, "but now the local manager is responsible for the training costs and travel expenses in his business plan, so he is more conscious of the costs and *benefits, and making decisions* accordingly."

Sometimes the similarities between the west and the former Soviet Union are stronger than the differences. The first priority of customers outside the big cities is still to ensure that Otis can deliver on time, and after that they discuss the price. But you might find a similar attitude in a small town in northern Canada, says Channin.

As for the lift industry people, you could put them in a room with their western counterparts and they would share the same concerns, says Channin.

TIPS FROM THE TOP

When it's all in the name

Clive Thompson, chief executive of Rentokil, offers advice on commissioning a new corporate identity

Rentokil

It is amazing how much difference type faces and letter styles can make

Rentokil

I have often said that if I had to choose a company name *today I would not choose the* name Rentokil. It is doubtful whether anyone in this environmentally aware age would be brave enough to select a *company* with the name "Rent to Kill", let alone hope to become the world's largest provider of tropical plants or develop flourishing healthcare and medical services businesses.

Indeed one top design company (which we didn't employ) said that a change of name was essential. But there is no doubt that names can be either silly or apparently inappropriate and still remain world famous and popular. Have you ever stopped to think about the food range called "Birds Eye" or the detergent called *"Fairy Liquid"*?

There is no doubt that some names achieve that elite status which transcends literal interpretation, and Rentokil *in the UK,* if not everywhere, has achieved this level. Experts believe it can take up to 30 years, and even after this time only a few companies ever achieve it.

So in commissioning a new corporate identity we applied one rule – no name change.

In drawing up a brief we first had to be brutally honest in accepting the weaknesses of the existing identity. *Two* harsh realities emerged: the letters were heavy, awkward and old fashioned – someone rudely likened them to the flared trousers of the 1970s; *the reversing out of* a red block gave a tabloid newspaper feel and seemed to lack quality.

It is amazing how much difference type faces and letter styles can make. We asked the designers to incorporate the fact that we are a company with many different services. Each business was to be represented by a symbol, but however hard you try it is difficult to find good symbols for all of our services.

We gave up on this in favour of a modern, friendly, up-beat feel but we just ended up resembling retail-type corporate identities.

We decided to explore other ideas. We *thought that* maybe a change from blood red for Rentokil might be timely, and we considered a variety of *different colours. However,* we *eventually* concluded that too much had been invested over many years in Rentokil red and we didn't feel comfortable with any other colours.

All this made us realise that we were after evolution not revolution, and we searched *for* our core values. From this heart searching the words "modern" and "quality" emerged, along with a very strong allegiance to the *royal warrant. We dropped all* the other ideas in favour of these images and the result suddenly began to appear before us.

We recognised evolution as the *solution* and that the strengths of our past had to be continued, but with a fresher, smarter feel. The result was the inclusion of the royal warrant, since we believe it is probably the best recognised symbol of quality in the world, alongside the word Rentokil with crisper, modern letters in an even stronger red.

We had originally expressed frustration at the number of occasions when Rentokil was broken into the three words Rent-to-kill, so the designers recommended an underline below the word to encourage *the eye to read it as one word.*

A thinner red stripe than previously was then added on the same white vehicles, with the addition of a *black trim at the* height of the bumper to give extra visual weight.

The result is that the new design has a modern, quality feel *which the old design did not;* at the same time the new one has enough resemblance to the old logo to be clearly evolved from it.

In the end, with 18 months of sometimes hard and frustrating work, the result was almost an anti-climax. We wondered: "Is it really different enough to reflect all that effort and money?"

The answer is a confident "yes". We learnt, like many others, that in the end the right answer is the one that feels right for you, and it is amazing how dated our old logo now appears.

Next Monday: Sir Geoffrey Mulcahy of Kingfisher on how to decide which charities to support.

Architecture/Colin Amery

Rebuilding of the Reichstag

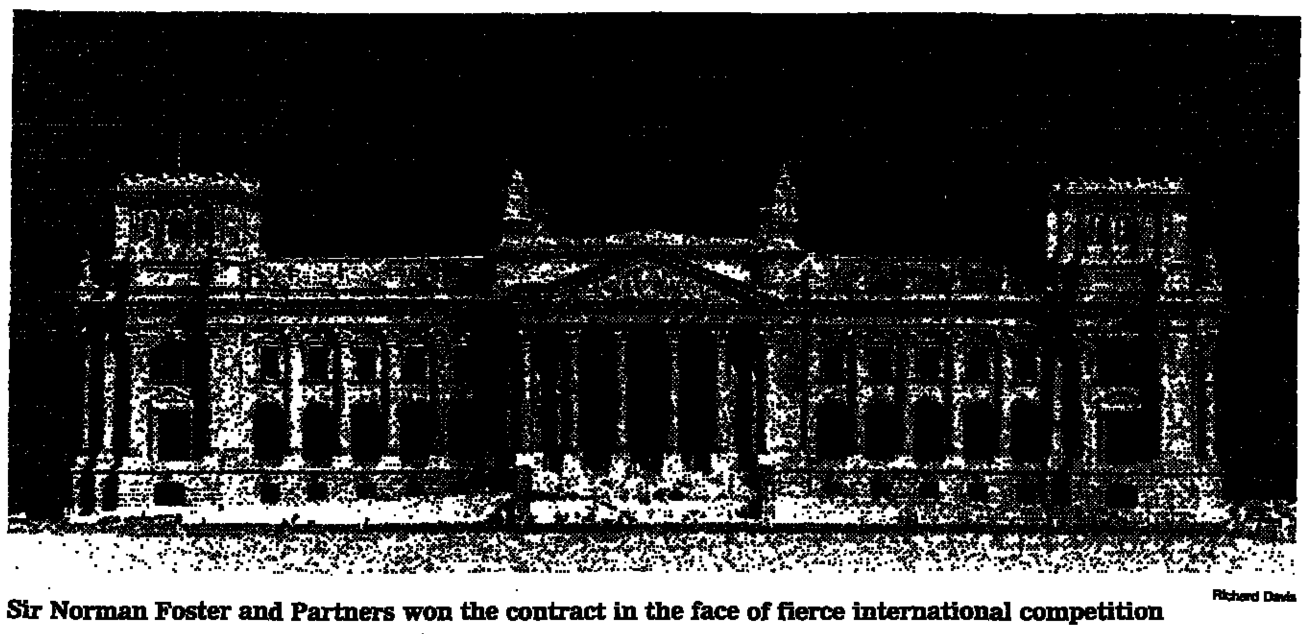
There is a special poignancy about the choice of a British architect to rebuild the home of German democracy in a Berlin that is united but still scarred by the wounds of division and war. And it is was a remarkable achievement of Sir Norman Foster and Partners to win the contract for rebuilding the Reichstag in the face of fierce international competition. A small, but scarcely adequate, tribute has been mounted by the Royal Fine Art Commission, where an exhibition of his designs for the Reichstagcan be seen for one week (until October 22) in the basement of No.7 St. James's Square, London, SW1.

German patrons of architecture are used to the competition system and in recent years it has been a very successful in providing some good, and a few excellent, contemporary buildings. The new museums in the former West Germany offer the most varied series of examples of international patronage. This is going to continue, with the competition for the Museum Island in Berlin offering an extraordinary opportunity for architects to build next to the great Altes Museum by Schinkel.

Who can ever forget the sight, even if only seen on film, of the blazing dome of the Reichstag in 1933? Hitler was on the rise and blamed the communists, but no one was fooled and the fire was later seen as a Nazi deed.

The first flames of the European terror. The Reichstag was completed in 1894 to the designs of Paul Wallot. It was opened by the Emperor and had taken 10 years to build. With its four pylon-like corner towers and giant portico, it had a high level of florid pomposity about it. Inscribed with the words "Dem Deutschen Volke", the Reichstag has always been a powerful national symbol.

Sir Norman Foster and Partners had to cope with the highest level of international competition and the little London exhibition shows their winning scheme alongside the two other entries that won the first stage, the Dutch architects, Pi de Bruijn; and the Spanish architect Santiago Calatrava. The first stage was open to all German architects and an invited list of some 14 internationally distinguished practices. Three schemes were then shortlisted and the brief was substantially revised. The winner was then chosen from this second stage. Architects of the quality of Hans Hollein, Helmut Jahn, Fumihiko Maki, Jose Rafael Moneo and Aldo Rossi all entered impressive schemes.



Richard Davis

Sir Norman Foster and Partners won the contract in the face of fierce international competition

German competitions also involve much public consultation and discussion. A major colloquium was held to discuss all aspects of the competition. The public was divided about the retention of the old Reichstag buildings. Parliament itself only voted by a very small majority to retain the major surviving elements of the old building.

Sir Norman Foster's first stage winning scheme was very different from the more modest scheme that finally won. The huge and marvellous roof that was originally planned to cover the whole old building (and a great deal more public space) has been abandoned; the present scheme encloses all the new uses within the framework of the old walls. Courtyards are reinstated and the formal nature of the old building is respected.

The seating arrangement of the main parliament hall is circular, based upon the recently completed parliament in Bonn. A great deal of work is done in committee rooms and these active areas all have to be visible and accessible to the public. (Much of the brief for the new parliament had to do with the need for democracy to be seen to be at work and for the whole parliamentary area to be public and accessible.) In Foster's scheme, the central plenary hall is a grand but naturally lit space. Glass lifts and glass floors in light wells will ensure sparkle and light throughout the building.

Symbolism is very important in a public building of this standing, but current contemporary architecture does not provide a very poetic or symbolic language. The new design which discards the giant umbrella roof will be a measured response to the powerful presence of the retained building.

His great roof for the Reichstag did imply that there there was more to democracy in the newly united Germany that could be encompassed by the walls of the old Reichstag. I expect the external profile to change as the plans grow and that he will create a wonderful and beautiful building in Berlin .

Theatre/Malcolm Rutherford

Machinal

Scenes of violence have been breaking have been breaking out in the London theatre. There was a gratuitous act of cannibalism in Mike Leigh's *It's a Great Big Shame* at the Theatre Royal, Stratford East, last week. More understandable, because it is an integral part of the story, is the sustained brutality in the RSC's production of *Tamburlaine the Great* at the Barbican.

The most intriguing example, however, is Sophie Treadwell's *Machinal* which opened on the Royal National Theatre's Lyttelton's stage on Friday.

On the face of it, this is a bold choice. Not everyone, including myself, had heard of Ms Treadwell before. She was an American journalist, part-time revolutionary who also wrote plays. Her dates are 1885-1970. The Mexican revolution, in particular, had an an influence on her.

Machinal, written in 1928, was her one undoubted stage success. It had a good run in New York and was shown in capitals around the world, including London and Moscow. If the title sounds almost as obscure as the author, it is because it is French, meaning "mechanical" or "machine-like".

And that must be one of the reasons why the National Theatre has chosen to stage it. Rarely can the RNT's mechanical resources have been deployed so extensively. The director is Stephen Daldry, who used to display his technical skills at London's tiny Gate Theatre in Notting Hill and recently showed his ability to expand with his direction of *An Inspector Calls* at the National. Here he cuts loose. From the flies to the orchestra pit, no part of the Lyttelton stage, which turns out to be more mobile than we had previously realised, is neglected. Whether it's tenements, offices, hospital or court, this is New York from the top to the bottom.

The mechanical climax is the electric chair. For *Machinal* is based on a murder trial which Ms Treadwell covered as a journalist. After six years of marriage to a man she never much liked, a woman of 29, played by Fiona Shaw, kills her husband, is convicted and sentenced to death.

Previously there has been some restraint, both in the staging and the writing. We do not see the murder. There is a moving scene when Ms Shaw is liberated by finding a lover (Ciaran Hinds), though it is the lover – for reasons unexplained – who turns in the decisive evidence against her. The trial scene, with all the workings of American law, is undeniably effective. Yet it is to the electrocution that the production, played without an interval, has been deliberately moving.

Ms Shaw strips to put on the death-robe with some dignity. Only when it comes to the shaving of her hair does she protest. There is a final, not very illuminating, exchange with her mother, then it's the chair, flashing of lights, and that's it: end of play.

Apart from showing off the RNT's technical resources and Daldry's skills as a director, with Ian MacNeil doing the work on the settings, there is another perfectly good reason for the revival: namely, curiosity value. You will not often see a piece like it.

One should be more sceptical, however, about the claims in the programme notes that it is all very relevant to the present day when, it is said, women are still unfairly sentenced for killing their husbands or lovers without account being taken of how far they were provoked. As a matter of fact, the husband in *Machinal* (John Woodvine) may be pretty boorish, but he's not *that* bad. There's no excuse for doing him in. Take this modern apologia in the programme with a large pinch of salt. I also wonder whether you do counter violence by showing so much of it on stage. Some of the directing looks obsessional. As for *Machinal*, it's a play without hope.

Malcolm Rutherford In repertory, Lyttelton Theatre, (071 928 2252)

Fiona Shaw and John Woodvine in Machinal

Opera/Richard Fairman

Mitridate, re di Ponto

This performance caused the biggest uproar I have ever witnessed at Covent Garden, when an eagle tethered to the ground fell over and was left upside down flapping its wings through the opera's long opening aria. A pair of parakeets due to come on later wisely cancelled their appearance.

By and large opera does not enflame emotions in Britain. I have been in an audience in Germany which drowned the music with whistles and football rattles; another in Italy drove the tenor off the stage before he had a chance to sing the top C they were convinced he did not have. British audiences, their laudable concern for birds and animals aside, are more tolerant and two years ago welcomed the Royal Opera's adventurous staging of Mozart's *Mitridate, re di Ponto*.

That was Mozart bicentenary year, when it was even possible to stage a 14-year-old's first try at an opera seria. On stage his early works tend to look drily conventional these days, unless the production stamps its own personality upon them.

Bruce Ford in Mitradate

The Royal Opera's production team – Graham Vick (producer) and Paul Brown (designer) – did just that. It may be that this *Mitridate* will eventually come to look typical of a passing fad for designer-label minimalist staging, but for the moment it seems fresh and striking in its simplicity, its perspectives, above all its magnificent blend of colours – deep glowing red, shot through with blues and piercing yellows.

Vick has accepted that in Mozart's day the performance style would have been stylised and, shunning a straight period copy, has sought a 1990s equivalent. The result suggests Far-Eastern ritual. Arms are delicately suspended, hands preciously clasped, in a style which can quickly become irritating if it is overdone. When Lillian Watson is singing with bright spontaneity, it is no help to have her and her attendents practising slow-motion wrist exercises.

When it matters, however, the idea is quietly set aside. The first sign of the great operatic master Mozart was to become occurs in the scene when Mitridate returns home from war, a foreshadowing of Idomeneo's moving homecoming. Helped by the production's ability to set a newly serious mood, Bruce Ford sang of the "beloved shores" with masterful poise. Of his two (originally castrato) sons, Ann Murray's strong Sifare was more successful at breaking the formal mould than the soft-grained Farnace of Jochen Kowalski.

The main newcomer to the cast was Luba Orgonasova as Aspasia. A perfectly-formed and delicate soprano voice, an extremely able technician, all that is known from recordings already. On stage she unfortunately sounded small-scale and unable to stir emotions with the voice. Paul Daniel was perhaps insufficiently strong-minded at shaping her slow music, but in everything that was fast he proved a positive, vital Mozart conductor. This *Mitridate* deserves to come back again, although next time I imagine the only birds on display will be the vocal canaries.

Further performances until 3 November

Opera/Clement Crisp

Twyla Tharp and Dancers

For lovers of dancing, Garrnier's palace – the Paris Opéra – is now the best place in the world. Of course, the Mariinsky Theatre will always be our holiest shrine, but French government policies have, over the past decade, made the Opéra a dance-house without rival.

This season iy will offer 10 different and richly varied programmes by its ballet troupe, plus visits by five invited companies from round the world. That I would not give certain of them house-room does not detract from the wisdom of the principles involved.

Last week the first visitors arrived, billed as *Twyla Tharp and Dancers*, but – with Miss Tharp obliged to stay in New York – amounting to "and dancers", which proved to be her newest troupe of 16 tremendous performers.

The repertory comprised seven pieces, created during the past 20 years, and across those years Tharp has established herself as the most imaginative and free-ranging of dance-makers.

When she started out as a choreographer in 1965, she was embroiled – but only for a brief span – in the deadly boring fashion of the period for "re-inventing" dance. This meant inaction as action, and the inexpert as expert. This was not for Tharp. A fireball of a dancer, she soon revealed the quality that has since marked her every work – her fascination with movement. She has journeyed through modern and post-modern, through jazz and show-biz, social dance and ballet, and in her travels she has taken ideas from each, fusing, contrasting, linking (and rejecting) elements to create a style that has spanned most forms of theatre, and has yet retained an integrity that comes from Tharp's devotion to movement.

It has been an education conducted in public, which has fascinated her audiences quite as much as it has fascinated Tharp. She has asserted both innovation and continuity, grafting popular dance onto balletic stock, freeing movement, re-thinking it, just as she dared to combine rag-time with Haydn in *Push comes to Shove*, and showed the classically sublime Baryshnikov as the best of jazz dancers.

Her choreography, as we saw in Paris last week, acquires an exhilarating freshness from this liberated imagination. Tharp, herself a virtuoso with a pugnacious and Cagney-ish air to her most daring feats, loves bravura. Her present dancers are dazzlers all, and number such artists as Stacy Caddell and Shawn Stevens from New York City Ballet, Petter Jacobsson (lately with the Birmingham Royal Ballet) and Jamie Bishton, a favoured Tharpian for several years. Thursday night's programme opened with last year's *Sextet*, a minor piece which toys with South American dance and the classic vocabulary. It comes as a shot of adrenaline to alert the public to what follows.

What follows is Tharp at her most stunning: this year's reworking of the latter part of her masterly *Brahms' Paganini* from 1980. Jamie Bishton is in white; two couples are in black. Brahms' variations coruscate around them, and the dance responds magnificently. Movement catches ideas from the score, transforms the prodigies of the pianism into a tremendous cut and thrust through which Bishton slides, curves, rolls and races like the world's greatest athlete, who is also the world's greatest dancer. Long swathes of dynamics, sudden subtle turns and curves, mark his dancing, which is glorious. So are his companions. So is the piece.

Then to *Baker's Dozen*, which has always seemed to me a view of the happiest comradeship among its cast of six couples. They dance, buoyed up on Willie "The Lion" Smith's enchanting piano music, and in their elegant white outfits, joking with each other in easy converse, they suggest a constant in Tharp's work: the need to make order out of chaos or disjunction. It is a beautiful and irresistible work, which the present cast perform irresistibly.

One may also trace certain subliminal links with the last, and major, piece in this programme: *In the Upper Room*. Tharp here offers the contrast between ballet shoes and trainers – and all that implies of gymnastic energy set against formal dance, between sport and art, between popular forms and academic disciplines. Not that she belabours the point. There is a flux of movement, almost unendurably energetic – a fact dictated by the relentless blare and grind of a Philip Glass score: vile though I found it, Tharp gives it theatrical sense.

Loose, grey-striped outfits reveal traces of other, red garments, and these are equated with differences in dance style. Jamie Bishton speaks (dances) for athleticism. Petter Jacobsson, classically dazzling, incarnates the rule of the academy, and magnificently so. But this analogy need not be pushed too far: Tharp's choreography justifies and illuminates both styles, and with increasing power as the work progresses. Its finale, in which choreography hurtles in and out of the shafts of light that are the decor – the activity emerging from nothingness – is a masterly exposition of Tharp's command of dance in the theatre. How long before we see Twyla Tharp and company in London?

INTERNATIONAL ARTS GUIDE

■ BERLIN

OPERA/DANCE

Deutsche Oper Tonight: Salute to Sinatra, with Barry McDaniel. Tomorrow: Aida. Wed: Fidelio with Nadine Secunde and Kurt Moll. Thurs: Madama Butterfly. Fri: Der fliegende Holländer. Sat: Die Zauberflöte. Sun: Der Rosenkavalier with Karan Armstrong and Kurt Moll (341 0249)

Staatsoper unter den Linden Tonight and Sat: Rigoletto. Tomorrow and Sun: Tannhäuser with Reiner Goldberg. Wed: Theo Adam song recital (200 4762/2035 494)

CONCERTS

Philharmonie Wed: Mikhail Pletnev piano recital. Thurs: Okko Kamu conducts Berlin Radio Symphony Orchestra in works by Tchaikovsky and Brahms, with violin soloist Miriam Fried. Sat: John Mauceri conducts orchestral music once denounced by the Nazis as degenerate. The Berlin Philharmonic Orchestra is on tour in North America till Nov 1 (2548 8232)

Schauspielhaus Thurs and Fri: Horst Stein conducts Berlin Staatskapelle in new work by Victor Bruns, plus Weber and Tchaikovsky. Sat, Sun, next Mon: Walter Weller conducts Berlin Symphony Orchestra in Smetana, Richard Strauss and Tchaikovsky, with horn soloist Radovan Vlatkovic. Oct 31: Seiji Ozawa conducts Vienna Philharmonic (2090 2156)

JAZZFEST

Berlin's annual jazz festival runs from Oct 28 to 31. This year's guests include the Carnegie Hall Jazz Band, John McLaughlin Trio, Woody Herman's Reunion Herd, Barbara Dennerlein Quartet, Steve Lacy's Vespers, John Abercombie Trio and Charles Earland Quartet. Most events take place at the Philharmonie (Tickets and information from the Berlin Festival office, Budapester Strasse 48, tel 254890)

■ NEW YORK

THEATRE

- Later Life: A.R. Gurney's witty and perceptive new play about the reunion after 30 years of a man and woman who were once in love (Westside, 407 West 43rd St, 307 4100)
- Angels in America: the first half of Tony Kushner's epic, freewheeling play about gay life, Reagan-era politics and Mormonism. Not to be missed (Walter Kerr, 219 West 48th St, 239 6200)
- She Loves Me: the 1963 Bock, Harnick and Masteroff musical makes a long-awaited return to Broadway in a transfer of Scott Ellis' Roundabout Theatre production first seen in June. A delicate, unabashedly simple story, with all the humanity, integrity and charm that Broadway's glitz-laden mega-musicals lack (Brooks Atkinson, 256 West 47th St, 307 4100)
- Kiss of the Spider Woman: a Kander and Ebb musical. The musical is based on the novel by Manuel Puig, is directed by Harold Prince, with a star performance from Chita Rivera in the title role (Broadhurst, 235 West 44th St, 239 6200)
- Annie Warbucks: Kathryn Zaremba, an infant phenomenon if ever there was one, has the title role in this beguiling sequel to Annie (Variety Arts, Third Ave at 14th St, 239 6200)
- Fool Moon: a comic entertainment written and performed by David Shiner and Bill Irwin, with music by the Red Clay Ramblers (Richard Rodgers, 226 West 46th St, 307 4100)

OPERA/DANCE

Metropolitan Opera Placido Domingo sings the title role in the Met's first production of Stiffelio opening on Thurs (repeated Oct 25, 28, Nov 1, 6, 10, 13). James Levine conducts a staging by Giancarlo del Monaco. The cast also includes Sharon Sweet, Vladimir Chernov and Paul Plishka. Repertory also includes Die Zauberflöte, Fidelio, Tosca and Madama Butterfly (362 6000)

State Theater New York City Opera's repertory this month consists of The Mikado, Le nozze di Figaro and three Puccini productions – La Rondine, Tosca and Madama Butterfly (870 5570)

CONCERTS

Avery Fisher Hall Tomorrow: Zdenek Macal conducts New York Philharmonic Orchestra in works by Rossini, Mozart and Dvorak, with flute soloist James Galway. Thurs, Fri afternoon, Sat and next Tues: Dennis Russell Davies conducts Beethoven, Walton and Debussy, with viola soloist Yuri Bashmet. Fri evening: Kurt Masur conducts Leipzig Gewandhaus Orchestra in symphonies by Mendelssohn and Beethoven. Next Mon: David Zinman conducts Orchestra of St Luke's (875 5030)

Carnegie Hall Wed: Hugh Wolff conducts St Paul Chamber Orchestra in works by Respighi, Beethoven and Tchaikovsky, with piano soloist Yefim Bronfman. Fri: Guarneri String Quartet, with clarinettist Harold Wright, play Brahms. Sun: Jean-Pierre Ramphal flute recital. Next Mon: Fiddlefest with Itzhak Perlman, Isaac Stern and Midori. Oct 28, 29, 30: Claudio Abbado conducts Berlin Philharmonic Orchestra in three Mahler programmes (247 7800)

■ PARIS

OPERA/DANCE

Opéra Bastille Myung-Whun Chung conducts a final performance tonight of Werner Herzog's production of Der fliegende Holländer. Roman Polanski's production of Les Contes d'Hoffmann can be seen tomorrow, Thurs, Sat (also next Mon, Wed, Fri), with a cast led by David Rendall, Gregory Yurisich, Diana Montague, Luciana Serra and Leila Cuberli (4473 1300)

Palais Garnier Ballet de l'Opéra de Paris presents a Jerome Robbins programme, opening on Sat and running daily except Sun and Mon till Nov 3 (4742 5371)

Châtelet Frankfurt Ballet opens a 10-day residency on Wed with the first of two William Forsythe programmes (4028 2840)

Bobigny Steve Reich's music-and-video piece The Cave can be seen on Thurs, Fri, Sat and Sun (4831 1145)

CONCERTS

Théâtre des Champs-Elyseés Tonight: Jean-Philippe Collard piano recital. Tomorrow: Lucia Aliberti, accompanied by Orchestre Colonne, sings Italian opera arias. Thurs: José Carreras. Fri: Alban Berg Quartet, with pianist Rudolf Buchbinder, plays chamber music by Dvorak and Janacek. Sun morning: Eliso Virsaladze piano recital. Oct 26: Gothenburg Symphony Orchestra. Oct 27, 28: Riccardo Muti conducts Orchestre National de France. Oct 29: Seiji Ozawa conducts Vienna Philharmonic (4952 5050)

Maison de Radio France Tomorrow: James Conlon conducts Orchestre National de France in works by Florent Schmitt, Poulenc and Roussel, with organ soloist Michel Bouvard (4230 1516)

Salle Pleyel Wed, Thurs: Pierre Boulez conducts Orchestre de Paris in works by Stravinsky, Berg, Debussy and Messiaen, with violin soloist Viktoria Mullova. Oct 27, 28: Semyon Bychkov conducts Mahler's Third Symphony. Fri: Marek Janowski conducts Orchestre Philharmonique de Radio France in Mozart and Liszt, with violin soloist Isabelle van Keulen (4561 0630)

Châtelet Sun morning: William Christie and Les Arts Florissants in a Boccherini programme (4028 2840)

JAZZ

- New York Voices, a jazz vocal group founded in 1987, is in residence for the next two weeks at Lionel Hampton Jazz Club, with a repertoire ranging from original compositions to Aretha Franklin, Stevie Wonder and Ella Fitzgerald. Music from 8.30pm (Hotel Meridien Paris Etoile, 81 Boulevard Gouvion St Cyr, tel 4068 3042)
- Paris International Jazz Festival for the next two weeks. Eric Barret Quartet and pianist Michel Petrucciani can be heard at Maison de Radio France on Sat and Sun (4230 1516). Théâtre de la Ville hosts concerts on Oct 27, 28 and 29 featuring Betty Carter, Bill Evans Band and others (4274 2277)

THEATRE

Jorge Lavelli's Avignon Festival production of Edward Bond's Maison d'Arrêt, runs at Théâtre National de la Colline till Dec 12 (4366 4360). A new production of Molière's Le Misanthrope, directed by Jean-Christian Grinevald, opens at Théâtre de la Main d'Or on Wed, daily except Mon till Jan 1 (4805 6799). Bob Wilson's stage adaptation of Virginia Woolf's Orlando, starring Isabelle Huppert, at Odeon-Théâtre de l'Europe, ending on Sun (4441 3636). Théâtre Nanterre-Amandiers has Eugene O'Neill's Desire under the Elms, directed by Matthias Langhoff, till Nov 4 (4614 7000)

ARTS GUIDE

Monday: Berlin, New York and Paris.
Tuesday: Austria, Belgium, Netherlands, Switzerland, Chicago, Washington.
Wednesday: France, Germany, Scandinavia.
Thursday: Italy, Spain, Athens, London, Prague.
Friday: Exhibitions Guide.

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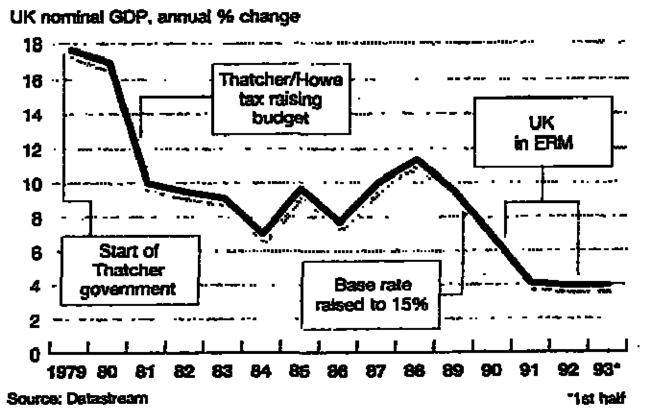
Wednesday Super Channel: Financial Times Reports 2130
Thursday Sky News: Financial Times Reports 2030; 0130
Friday Super Channel: European Business Today 0730; 2230
Sky News: Financial Times Reports 0530
Saturday Super Channel: Financial Times Reports 0930
Sky News: West of Moscow 1130; 2230
Sunday Super Channel: West of Moscow 1830
Super Channel: Financial Times Reports 1900
Sky News: West of Moscow 0230; 0530
Sky News: Financial Times Reports 1330; 2030

Samuel Brittan

An inflation target is not enough

Can the level and amount of spending in an economy or group of economies be so low as to lead to unnecessary unemployment and recession? Keynes gave a resounding "yes" to this question. The mistake postwar governments that tried to follow his teachings made was to suppose that monetary and fiscal policy could be determined solely with an eye to output and jobs, without taking prices into account – other than by controls or by jawboning. The result was that inflation took off and one government after another found its policies derailed. (It is sad that Michael Stewart cannot see why these events occurred in his new Penguin polemic, *Keynes in the 1990s*.)

How UK demand has fallen away



Source: Datastream *1st half

The result was that by the end of the 1970s most countries were trying to return to some sort of sound money policy. This was very necessary. What was unfortunate was that they did not stop at throwing away the inflationary bathwater; they threw away the common-sense baby as well. For it remains true that total spending in an economy can be too low as well as too high.

British sound money policies took the form first of monetary targets and then of exchange rate objectives, culminating in ERM membership. After both these gods failed, the government announced an inflation target of 1 to 4 per cent, with the hope of eventually reaching the lower half of the range, as its only macroeconomic goal. Most commentators were so relieved that something had been saved from the wreckage that they did not realise that an inflation target on its own was a retrograde step, which did indeed risk throwing out the baby of sensible demand management with the bathwater of inflationary finance.

Yet there were a few voices who had all along urged a form of demand management that was in keeping with sound money, but also provided a safety net against unnecessary recession. The headline of this policy had the jargon-sounding name of Nominal GDP – a national cash flow objective might be a good translation. All it means is that governments and central banks should try to maintain a level of spending low enough to prevent an inflationary take-off, but high enough to secure adequate growth when pay and prices are sufficiently restrained.

Interestingly enough, the original monetary targets, if they had worked, would have been more helpful here than the new direct targets for inflation. Monetary targets were supposed to stabilise a quantity known as PT, the price level times the volume of current transactions. So once a tight money policy had done its job of squeezing out inflation, P would fall, T would rise, and output would automatically recover.

A price target on its own, however, contains no such safety net. If real output were to fall by 10 per cent and inflation remained at 1 per cent, everything would seem to be fine except for the blood on the streets.

The chart shows that these are far from hypothetical reflections. There is no mistaking the trend. In the first couple of years of the Thatcher government Nominal GDP was still rising at double-digit rates. So although I was not a particular fan of the 1981 Budget, which raised taxes in a recession, there was no way in which I could support the 364 protesting economists or the self-proclaimed "Tory wets".

We are now in a changed universe. On the latest estimates UK Nominal GDP is rising by 4 per cent per annum, compared with the rate of 6 or 7 per cent consistent with moderate recovery and low inflation. These few percentage points of shortfall can eventually amount to hundreds of thousands of jobs.

So the UK needs a tightening of policy like it does a hole in the head. The same applies to most other Group of Seven countries for which similar charts can be drawn. A Nominal GDP objective is easier to achieve for the world's leading economies in concert – which is one reason to avoiding a unilateral slashing of interest rates by the UK.

There will be ample opportunities for a concerted approach at the proposed G7 "employment" summit as well as the EC summit on October 29. One low-key proposal would be to ask the – already existing – staff of the European Monetary Institute to map out, without committing their bosses, what a sensible path of Nominal GDP for the Community might look like and alternative methods of achieving it. But action in the spirit of the idea is required earlier – and was indeed called for in the IMF *Economic Outlook*, although wrapped up in the verbiage of that institution.

Tactics for smooth touch-down

Paul Betts on Boeing's efforts to ride out the downturn in the new aircraft market

The problems facing Boeing, the world's largest manufacturer of airliners, are as big as its jumbo jets.

Although the company celebrated a landmark last week by delivering to Singapore Airlines the 1,000th 747 jumbo to be built, so far this year it has failed to win a single order for this, the biggest and most profitable aircraft in its product range.

Mr Philip Condit, Boeing's president, says there are some "faint positive signs" in the market, but he does not expect any swift, sustained recovery in new aircraft orders. "I'm not holding my breath," he adds.

The situation at Boeing's 1,000-acre facility at Everett, outside Seattle, the world's largest manufacturing plant, illustrates the company's predicament. Boeing has spent $2bn in the past two years expanding its plant to start producing the 777, its new wide-bodied airliner. This has increased production capacity at the plant – which already employs about 27,000 people and also assembles the 747 and 767 – from 14 to 21 aircraft a month. At best, next year Everett will be turning out only nine of these wide-bodied aircraft models a month.

The recession and financial turmoil in the airline industry have forced Boeing to cut production rates for its entire family of airliners – including the narrow-bodied 737 and 757, built at Renton, Seattle – from a peak of 39½ aircraft a month to 21 in the past 18 months.

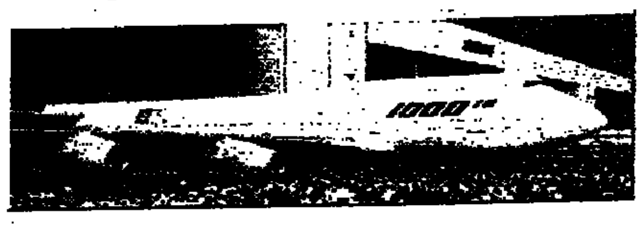
The dearth of orders means production of the 747 alone has fallen from seven aircraft a month to four a month and will drop to three in January. It could fall still further, and the company will probably have to shut one of its two 747 assembly lines next year.

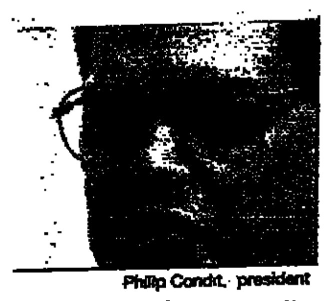
At Everett alone, there are some $4bn worth of stocks. "It's a hell of an investment if you are not using it," says another Boeing executive.

The company's problems have increased as a result of growing competition from the European Airbus consortium. Boeing has responded by developing new products to compete against the European group in one of the deepest cyclical downturns in the industry's history.

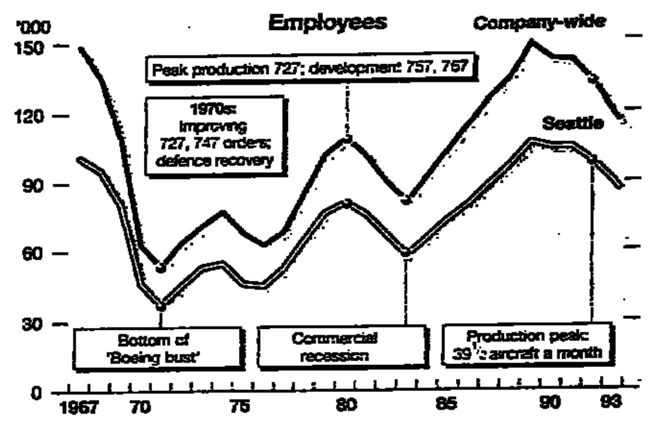
Apart from the 777, which challenges the Airbus A330 and A340, Boeing is planning a new family of 737 airliners to defend its position against the A320 in the 150-seater airliner market. It is also developing a cargo version of the 767.

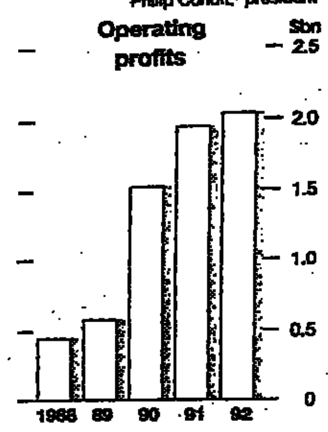
Boeing: jumbo-size problems





Philip Condit, president





This has pushed up research and development spending to about $1.7bn this year, while new aircraft deliveries to customers have fallen from 446 last year to about 350 this year, and will fall further, perhaps to about 258, next year.

But Mr Condit, a 52-year-old engineer who joined Boeing 28 years ago and worked his way up the ladder, becoming president last year, says he has seen it all before. "We were down to 1½ 747s a month in the mid-1970s and down to two a month in the mid-1980s, when we could have built up to seven a month," he says.

Boeing, says Mr Condit – widely tipped to take over eventually from Mr Frank Shrontz, Boeing's chairman – is also responding to market pressures by radically changing the way it does business. "What we are doing is the re-engineering of Boeing," he says.

In the past, Boeing was an engineering-led company with technology driving its product strategy. Today, the company wants to be a market-driven company with customer requirements dictating strategy.

"We are now adopting a very strong customer focus to provide our customers with value for money and speed in the way we respond to their needs," Mr Condit says, adding that in the competitive aviation business "the race goes to the one who keeps running".

At all costs, Mr Condit wants to avoid the mistakes of the big US car manufacturers. "The US car companies spent a lot of time watching each other and forgot to watch the customer. The result was to let the Japanese come in and change the character of the US car industry," he says, implying Boeing will not make the same error with its European competitor.

Mr Condit's model is General Electric, the US conglomerate which has become a growing force in the commercial aerospace business after its rescue of GPA, the troubled Irish aircraft leasing company.

"GE has done well in recognising they needed to focus on customers, value and speed of reaction," says Mr Condit, who visited GE in August with other senior Boeing executives.

The clearest sign of restructuring at Boeing is the depth of job cuts the company has made to adapt employment to lower production levels. From a peak of 148,672 employees in November 1989, the workforce is expected to fall to about 116,000 by the end of this year.

But the company has managed to mitigate some of the shock of the restructuring programme by slowing down its reduction of the huge backlog of firm aircraft orders, which totalled $80.8bn at the end of June. "In the current cycle we did not increase our production rate as fast as we did two decades ago. In the 1970s we worked off our backlog too fast, and when the market stopped we fell off a cliff," Mr Condit explains.

The drive to hold down costs and improve productivity has enabled Boeing to maintain operating profit margins on commercial aircraft programmes despite a reduction in output. The company, which has seen aircraft leasing and financial support to customers increase sharply in the current downturn, believes its restructuring efforts will help it exploit the next growth cycle.

Operating profit margins have improved in Boeing's defence and space business, which accounts for about 20 per cent of group sales. A few years ago, Boeing considered moving out of the defence business, but Mr Condit now sees good potential for the company in this sector.

With few indications of any short-term recovery in the commercial aircraft market, Boeing, Airbus and McDonnell Douglas are chasing the last big airliner order in the current cycle: for up to 60 aircraft worth about $6bn from Saudia, the Saudi Arabian carrier.

Competition for the deal has led to a revival in the trade dispute between the US and Europe over government subsidies for Airbus. But Mr Condit plays down the issue, insisting "trade wars are not beneficial to either side".

He confirms Boeing is "really interested" in working with the four Airbus partners – Aérospatiale of France, Deutsche Aerospace, British Aerospace and Casa of Spain – on a new 600-800 seater super-jumbo.

But, while evaluating the market for what it calls a Very Large Capacity Aircraft (VLCA) with the European companies, Boeing has, alone, been considering a stretched derivative of the 747: it will be about 20 per cent longer with two decks running the full length of the fuselage.

Mr Condit does not expect either programme to be launched before the next century. Overcapacity in the airline market continues: about 1,000 new aircraft lie idle in the Californian desert; the 747 and the new 777 already provide aircraft with 400 seats or more; and a version of the 747 used on some Japanese routes can carry 550 passengers.

The last thing Boeing wants is another costly development programme when orders are falling and it is already having to spend heavily on other commercial aircraft projects. But the company is determined to defend its 60 per cent share of the world airliner market and monopoly in the jumbo sector.

The aerospace industry does not expect a rebound in commercial aircraft ordering until 1995 or even 1996. Mr Condit says he is not interested in forecasts but in getting his strategy right: "We will be focusing more than ever on our customers' requirements, and we don't want to be left behind to allow someone else in."

LETTERS TO THE EDITOR

Number One Southwark Bridge, London SE1 9HL
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UK too zealous on safety regulations

From Mr Daryl Jones.

Sir, I see that Mr John Rimington, the director-general of the Health and Safety Executive, is still referring to EC legislation as being "unnecessarily prescriptive" (Letters, October 13).

I did an analysis of the Health and Safety Commission's "six-pack" regulations and the original six EC directives. Ifound that the UK was over-zealous in its interpretations of EC directives.

For example, the Council directive on the minimum safety and health requirements for work with display screen equipment (90/270/EEC) is only five pages in length, including annexes. However, the UK regulation – Health and Safety (Display Screen Equipment) Regulations 1992 – is 33 pages long. Another five regulations put out by the HSC are equally prolix.

If Mr Rimington refers to the Department of Trade and Industry Scrutiny Team report on the "Review of the Implementation and Enforcement of EC Law in the UK", he will see that health and safety issues are already under review *owing to unnecessary over-regulation, especially of small and medium-sized businesses* – the life blood of Britain's economy.

Daryl Jones,
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Belgium

Rate cut not a prudent way of offsetting VAT rise

From Prof Geoffrey E Wood.

Sir, The proposal that tax increases in the November Budget be offset by a base rate reduction is gaining wide acceptance. Its attractions may seem obvious, but there are drawbacks which have not, at least in public, received much attention.

First the effect on prices. If the tax increase is by means of VAT, this affects the underlying rate of inflation; in contrast, an interest rate cut affects only the headline rate.

Second, what of the effect on demand? A tax increase may reduce demand, and an interest rate reduction increase it. But do they do so with the same time lags? If not, carrying out the proposal could easily lead first to slowing the economy when it is weak, and then stimulating it when recovery is again under way.

And third, the interest rate is used to control money growth. A cut in interest rates will make money growth higher than it would have been, in principle forever, until the cut is reversed.

Output will be boosted first, but subsequent inflation will be increased. The fiscal change will have, at most, only a one-off effect on demand. Is it prudent to neglect the longer-run effects of monetary policy? It certainly has not been in the past.

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The meaning of independence

From Prof Lucio Izzo.

Sir, Your Rome correspondent goes a long way ("Easier said than done", October 12) in trying to lend weight and dignity to grossly unfair criticisms which have been levied against the strategy of Prof Romano Prodi, head of Iri, for moving ahead with the Comit and Credit privatisations. I do not see any other alternative to Prof Prodi's strategy, do you?

Let me add a comment to your correspondent's assertion that Mediobanca is independent. Independence should not imply being unaware of conflicts of interest. However, this is probably its interpretation of the word independence. Indeed, once upon a time its management (incidentally, still running the same company) was part of a young syndicate of Mediobanca shareholders whose existence was kept secret from other shareholders. Shameless exploitation of asymmetry of information is obviously completely different from independence, but I am not sure Mediobanca's management is of the same opinion, at least from what can be understood from its behaviour.

Lucio Izzo,
University of Rome
(La Sapienza),
Italy

Absurd to hold banks responsible

From Mr J C Munnery.

Sir, You reported that Mr Tim Yeo, the environment minister, is to tell leading banks that the government believes they have financial responsibility when lending monies to companies that pollute the environment ("Banks face liability for pollution", October 13).

This seems absurd, unethical, and inequitable. How can the lender be held responsible if he has no control over the purpose for which the asset is used. He may have financed it, but the lender is no more than a supplier to the customer of money and financial services. So why not hold accountable those others who have supplied resources, like the utilities for power and telecommunication, for example?

The assumption of responsibility appears too obscure to be maintained, and I guess the purpose is to effect some form of tax from the private sector. If so, the authorities should come clean and say so.

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Patent law puts EC generic drugs companies at disadvantage

From Mr Greg Perry.

Sir, In his article, "Cheap drugs attract the giants" (October 12), Paul Abrahams stated that "generic companies have proved increasingly aggressive in their ability to market drugs from the day of their patent expiry".

It should be pointed out that this situation has developed in the US because quick access to the market for generic medicines has been encouraged by law. Moreover, US patent law is markedly different from patent laws in the European Community, which operate *against* quick market access for generic medicines.

Under US federal law generic companies are given the right to make their lengthy research and registration work (ie pre-market preparations) during the patent period. The right to work during the patent was given to US generic manufacturers as "compensation" for the patent extension given to the US research-based companies.

In most European Community countries, the right to work during the patent has either been judged to be illegal or remains ambiguous. Moreover, a recent EC regulation introducing extensions for EC pharmaceutical patents failed to provide European generic manufacturers with rights similar to those enjoyed by US generic companies. Consequently, it can take European generic manufacturers up to three years after patent expiry before they can market their products.

This imbalance in European Community law has two major consequences. First, it undermines European health policy by delaying the marketing of less costly generic medicines. Second, it leads to the absurd situation of giving US generic companies (whether independent or owned by one of the "giants") the potential to launch their drugs on the EC market before European companies.

The situation arises because on the day of patent expiry a US company could be in the position of having legally completed its research work in the US; while a European company will only have just been allowed to start its research in the EC.

Europe's generic medicines industry has requested the European Commission to propose measures to amend this imbalance. However, the industry is still awaiting a reply.

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FINANCIAL TIMES

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Monday October 18 1993

Down to the wire in Geneva

WITH LESS than two months to go to the date almost everyone agrees must be the ultimate deadline, the Uruguay Round multilateral trade negotiations still look like shadow-boxing. As the talks on proposals to cut tariffs and improve market access rumble on in Geneva, the heavyweight pugilists – the US in one corner, Europe in the other – hover at the edge of the ring, withholding their serious punches until just before the final bell on December 15, when President Bill Clinton's "fast-track" negotiating mandate from Congress expires. Given the rising political heat on both sides, the risk remains that the last bout will come too late to save the round from collapse, with grave consequences not only for global free trade but also for the future of the EC and of transatlantic relations.

It is hardly surprising in the circumstances that both the US and France – the Community's main recalcitrant – are expending as much time and effort in positioning themselves to blame the other for failure as they are putting into substantive negotiations. France even suggested last week that some form of interim agreement could be struck by December 15, leaving controversial issues such as agriculture to be dealt with later. This is even less likely to succeed than France's forlorn campaign to reopen the Blair House farm trade accord with the US, and is so patently absurd that it makes one wonder whether the government of Mr Edouard Balladur has a serious strategy for escaping from the hole into which it has unnecessarily dug itself over the Gatt. The whole point of the round is to achieve a balanced package of agreements; any partial deal that excluded farm trade even temporarily would have no attraction for many of the most important potential signatories.

Regrettable posturing

Such posturing is all the more regrettable since the differences between the US and the EC are now rather small, and the type of trade-off that will have to be made is already evident: for example, between Europe maintaining some restrictions on imported films and the US being permitted to preserve some protection for its shipping industry. What is needed is the political leadership to patch such compromises together, and the salesmanship to trumpet them as a breakthrough.

Last summer, Mr Peter Sutherland, Gatt director-general, set out a clear timetable for resolving the remaining differences. Unfortunately, it is already showing signs of slippage. By last Friday, for example, bilateral negotiations on tariff levels for manufactured goods were supposed to have been completed. Yet the US, Japan, Canada and the EC are still haggling over the fine print of a tariff deal they supposedly struck in Tokyo last July, and while the EC has promised to table a more generous tariff offer today, there still seems some way to go before that will be acceptable to the US or other trading partners.

Force the pace

On financial services, the deadline for agreement is the end of this month, but there too success is far from assured, with east Asian countries continuing to resist US pressure to open their markets. Formal negotiations on market access in agriculture – a separate issue from those covered by Blair House and a potential key to overcoming French recalcitrance – have yet to begin.

All this matters deeply. It is essential for a successful conclusion to the Round that rapid progress be achieved on these issues, both for its own sake and to force the pace on farm trade. Only when the US, EC and other parties have reached sufficient agreement in a sufficient range of other areas will they be in a position to grapple plausibly with this problem.

At that point, Mr Balladur will need a ladder to climb down, and it will be for his European partners to provide it – by warning France of the consequences for the Community and in particular for Franco-German relations if he fails to sign, and probably by furnishing further assistance for French farmers from the EC budget. Faced with such sticks and carrots, it is hard to believe that France would fail to grasp the wider benefits of a Uruguay Round accord. It is in all the parties' interests to ensure that this moment of truth is not much longer delayed.

Back to work at Westminster

THE ROAD to the restoration of the British government's authority is still a long and painful one. The next stage begins today, when Parliament returns. The most that can be said so far is that the government has not fallen apart. If it is to do better than that, it must hold its nerve and show that it is possible to make its decisions stick. That requires unity on its own benches. The Conservative party must decide whether it wants the responsibility of office or the luxury of a period of opposition, in which it might freely indulge its post-Thatcher propensity for ideological bickering.

After the formal business of the cabinet was concluded last Thursday, ministers congratulated themselves, and the prime minister, on what they saw as a successful party conference. What actually happened at Blackpool was that various threatened disasters did not take place. The publication of Lady Thatcher's criticisms of Mr John Major did less damage to her successor than had been feared. Mr Major himself survived unscathed; his leader's speech, which relied heavily on nostalgia, was well-received by an audience primed to be receptive. A facade of unity was erected on the flimsy foundation of a number of speeches attacking various scapegoats for the government's failures: criminals, unmarried mothers, pornographers, foreign dependents on British social security and the like.

Deep hole

This may not leave a pleasant taste in the mouth, but it served its purpose, which was to get the government through a difficult week. Mr Major remains, however, in what the chancellor, Mr Kenneth Clarke, has called a deep hole. The man with the heaviest responsibility for the rescue operation is Mr Clarke himself. As matters stand, he is in the deepest hole of all, £50bn deep. His Budget on November 30 will be judged in part by the extent to which it reduces that deficit. Whatever he decides to do is likely to be opposed by one lobby or another, as today's debate on defence is likely to demonstrate.

A government that cannot withstand lobbies is no government at all. The defence budget is already being reduced, under Options for Change, and the defence secretary, Mr Malcolm Rifkind, appears likely to offer up politically motivated "unthinkable" cuts in an effort to protect his department's bottom line from further raids.

There is a strong case for a further challenge to the defence budget, as the wider review of public spending unfolds in the next three years. The possibilities of merging Britain's defence responsibilities with those of European allies have not been fully explored. The ambitions of the forces chiefs are still attuned to an earlier age. There is a limit to what can be afforded by a modest country like Britain, which still maintains tanks it cannot keep in good repair and which it could not protect in wartime without the assistance of allies.

Radical change

The defence secretary insists that spending must be tailored to the demands on the forces deployed. He wants a review before any further deep cuts. The chancellor might call Mr Rifkind's bluff. He could try setting a low figure and asking the ministry to demonstrate what commitments it could meet with that. This would be a radical but necessary change in the order of determining the budget for the only high-spending department that is not protected by election promises (health) or sheer numbers of genuine dependents (social security).

Other politically difficult decisions remain to be taken before the Budget. The government appears to be soft-pedalling on British Coal's pit closure programme. This may buy a few doubtful weeks of political peace, at a cost of larger stockpiles and lower coal sales later on. It seems to be wavering on the details of rail privatisation, particularly the House of Lords amendment allowing British Rail, the management that got the railways where they are today, to bid for the privatised lines. This is government by parliamentary rebels.

Mr Major needs to demonstrate that he and his colleagues can be as effective with a majority of 17, plus nine Ulster Unionists, as his predecessor could with majorities four and five times as large. The question is, will his party allow him to do so?

The London Stock Exchange seems to have no clear strategy for resisting rivals and handling technological change, says Norma Cohen

Surrounded by the hungry pack

On the 23rd floor of the London Stock Exchange tower, the walls are lined with portraits of former chairmen. From their ornate gilt frames, past generations of grandees gaze down on the City with an air of haughty self-assurance, untouched by doubts about the future.

When the present chairman, Sir Andrew Hugh Smith, sits for his portrait ahead of his retirement next year, the artist is unlikely to capture such an air of serene complacency. Like other stock exchanges round the world, London's faces unprecedented commercial challenges. Unlike its overseas rivals, however, the London Stock Exchange also faces a crisis of confidence.

The people whose confidence matters most to the exchange – the marketmakers and brokers who form its membership, and the investment institutions that buy and sell the bulk of the shares traded – are happy with the day-to-day work of the exchange. Their concerns cover just the area about which the chairmen in the portraits were so sublimely confident: the future role of the institution itself.

One incident crystallises these doubts: the ignominious failure, earlier this year, of the stock exchange's ambitious Taurus project to computerise the settlement of stock market bargains. Because of that failure, the exchange lost its chief executive, Mr Peter Rawlins, and has all too publicly failed to find a replacement.

Worse, Mr Rawlins's departure led to the abandonment of his elaborate vision of the exchange's future – and, again, there is no substitute in sight. The vision was abandoned partly because it offended the big marketmaking firms. Tensions between them and the stock exchange's management also led to a row over whether the exchange could be trusted to deliver its next big computer project, rebuilding the Seaq trading system.

When City figures discuss the future of the stock exchange, the conversation usually revolves around these unique local issues. But the biggest challenge it faces is the problem it has in common with the rest of the world's stock market bodies: the commercial threat from rival trading systems.

In London, these competitors include Reuters' Instinet system, Tradepoint and Posit, all offering investors or marketmakers an alternative price display mechanism.

It is the threat they pose that is the real issue at stake in the debate over the future of the London Stock Exchange. And the exchange knows it.

Its counter-attack has already started. "Those who provide marketplaces ought to have regulatory obligations," says Sir Andrew Hugh Smith, chairman of the stock exchange. The emerging competitors, Sir Andrew argues, could not operate without the stock exchange's presence as the central bulletin board for posting prices, and without its role as a regulator. "These exchanges can't operate without a price formation system. They are parasitic," he says.

The stock exchange has asked the Securities and Investments Board to review the regulatory oversight it gives to all exchanges operating in the UK. Sir Andrew argues that the London Stock Exchange cannot compete on the same commercial basis as the newcomers because they do not have the regulatory duties, such as surveillance and maintenance of listing requirements, that it has.

What particularly irks Sir Andrew is that, unlike his institution, which is treated as a Regulated Investment Exchange under securities laws, Tradepoint and other competitors only need to meet the much simpler requirements applying to those defined as service companies. The stock exchange cannot afford to have its most profitable activities "cherry picked" by competitors, he says.

Its complaints have not fallen on deaf ears. The SIB has appointed Mr Jonathan Agnew, formerly chief executive of Kleinwort Benson, to prepare a discussion document on the matter, among other issues.

So far, Sir Andrew says that the competing exchanges account for well under 5 per cent of all trading activity. But evidence from the US suggests the London Stock Exchange is right to be worried. The New York Stock Exchange, as of last year, found that more than a third of the trading volume in all the stocks it lists actually occurs on a competing exchange, and its revenues have suffered accordingly.

Like the New York Stock Exchange, the London exchange is building its case on what it believes to be an issue of public interest: the desirability of a unified, central marketplace for equities, rather than a proliferation of rival markets. Only a single central market provides a guarantee that all participants will know about – and get – the best possible price for their share transactions.

Not everyone accepts this case. "The exchange likes to say it is the central marketplace for securities trading," says one regulator. "Arguably it does no such thing." Indeed, the exchange, through its Seaq International system, is actively engaged in fragmenting the markets in other countries by allowing marketmakers to post two-way prices there. The effect has been to draw business away from domestic markets, particularly in Europe, and attract the ire of local bourses. The exchange says that more than 90 per cent of cross-border European trades are conducted on Seaq International. "If central markets are so valuable, why are we promoting Seaq International?" the regulator asked.

As well as issues of principle, there are also practical considerations. The new rivals offer facilities the London exchange cannot currently match. Its present Seaq system acts, in effect, as a bulletin board for marketmakers to post the constantly changing prices at which they are prepared to buy and sell securities in bulk. It is not interactive: it does not allow marketmakers to communicate directly with each other, nor even to confirm electronically that a bargain has been struck.

By contrast, Tradepoint, one of the exchange's emerging competitors, will operate an order-driven system in which marketmakers or institutions will be able to post prices anonymously. The system will be able to aggregate orders and present them in bulk to users, and will offer automatic trade confirmation. Mr Peter Bennett, chief executive, says that it is intended that users will be charged roughly half of the 0.20 per cent fee now charged on bargains effected through the stock exchange.

The stock exchange cannot afford to have its most profitable activities 'cherry picked' by competitors

The growth of new technology and the growing institutionalisation of the market mean that the bulk of the exchange's users could operate their own mini-marketplaces from their desktops, combining feeds from several competing trading systems.

If the stock exchange is worried about the costs of its regulatory duties, should it not simply give them up, to compete more efficiently as a commercial entity? That is not in anybody's interest, says Sir Andrew. "Someone who is merely a regulator might make rules which harm the market," he says. And privately, exchange board members acknowledge that, without its regulatory role, it could no longer confer such a valuable imprimatur on companies listed on it and it would lose what is probably its most valuable competitive advantage.

The stock exchange is getting little help from a UK government philosophically committed to promoting competition. As a result, it has surrendered its monopoly over the distribution of price-sensitive information about companies it lists. Also, it has announced it will no longer provide end-user terminals for information, in recognition of its inability to compete commercially with other providers, such as Reuters.

The good news for the stock exchange is that, broadly speaking, its users are emotionally committed to the maintenance of a central marketplace and believe the exchange is the best suited to operate it. Also, they are happy with the service it provides. Mr Geoffrey Lindey, vice-chairman of the investment committee of the shareholders' group, the National Association of Pension Funds, says: "I can't think of any major change we would make.

The chairman says that, in spite of the Taurus debacle, the exchange should continue to have a role in settlement

"We don't care how the service is delivered; what we want is a well-ordered, regulated market which provides liquidity and transparency. And liquidity is number one." But such satisfaction does not mean that the leading institutional investors will never defect from the stock exchange to the new technologies, if they perceive additional benefits to be gained there.

If this commercial challenge is the greatest long-term threat to the exchange, the shorter-term problems loom at least as large in public discussion.

The inability of the stock exchange to replace Mr Rawlins has given the impression of an institution adrift. Sir Andrew is due to retire in November 1994, and leadership at the top remains a question.

When Mr Rawlins left, the exchange also abandoned his controversial vision of the way forward for trading in London. He urged a three-tier market, with large liquid European stocks traded using a marketmaking system in which dealers agree to make two-way prices at all times. Large domestic stocks would be traded in this fashion as well. Smaller stocks could be traded on an "order-driven" basis, where those wishing to buy or sell would post their offers. Small illiquid stocks could be traded using a "specialist" system similar to that on the NYSE.

"There is no demand for the Rawlins vision," Sir Andrew says. "That does not mean that 10 years from now there won't be." But what vision the stock exchange has of itself, as technology evolves and markets become more international, remains unclear. Sir Andrew says the exchange's main function is to provide a means of converting long-term savings into capital and to help companies raise capital as cheaply as possible. That means running an efficient and orderly market where "we encourage investors to put up money knowing they can get it back when they need it".

And settlement is part of that, he says. The Bank of England is now heading a project to produce a successor to Taurus. Sir Andrew believes that, in spite of the Taurus debacle, the exchange should continue to have a role in settlement, either through representation on the board of the entity that emerges from the Bank's study or through partial ownership. Yet the Bank has suggested there is no role for the stock exchange to play in settlements at all.

Despite the Taurus affair, the exchange seems reluctant to give up the idea that it should be in the business of building systems, not just operating the commercial systems of others. Several board members revolted earlier this year over the exchange's plans to build a successor to Seaq with the help of Andersen Consulting. Instead, they wanted a cheaper option proposed by Nasdaq, the US-based exchange which is also updating its technology.

Eventually, Sir Andrew, who championed the home-grown system to be known as Seaquence, got a majority of board members to approve the home-grown system, but not without deep misgivings on the part of several.

The new system, Sir Andrew says, will be adaptable to what may be the future of the stock exchange: a bifurcated market with different terms and different regulations for professional and retail investors. Privately, several board members believe this is the route the exchange should be pursuing. Yet it may suggest higher costs and poorer prices for retail investors, and so may be politically unpalatable.

Amid these uncertainties, the exchange's vision of how it intends to adapt itself to increasing competition and a technological revolution remains unclear. If it fails to develop a coherent view of how it is to survive, it risks the drift towards irrelevance which befell other once-glorious City institutions, such as the discount houses, the Port of London Authority, and Lloyd's. After all, they had walls full of portraits, too.

OBSERVER

Wachsing lyrical at VW

■ Otto Ferdinand Wachs has at last been awarded the label to accompany the job he has been doing for the past three months.

Now named as head of public affairs at Volkswagen, Wachs has formally taken over the role of Lutz Schilling, the ill-fated former group spokesman.

Schilling carries the can for the public relations catastrophes incurred in the fumbled defence of both the group and production director José Ignacio López de Arriortúa, against accusations from rival carmaker Adam Opel.

It was Schilling who sat at the side of Ferdinand Piëch during the gruesome summer press conference in Wolfsburg, at which the VW chairman's bellicosity earned him public reproaches from Chancellor Helmut Kohl.

Now Schilling will occupy himself with less strenuous matters, such as corporate identity and motor sports. His toughest immediate task will be steering next year's VW sponsorship of a European tour by the rock band, Pink Floyd.

Wachs is former press chief for the VW car marque. His snappy dress and a penchant for Italian wine bars – both rarities in VW country – have earned him the soubriquet "the Wolfsburg yuppie" in some quarters.

But Wachs is one of the few old-guard VW senior managers to survive and be promoted by Piëch. Moreover, during the recent lull in the Opel-López affair he has guided his fractious boss through a series of image-restoring interviews.

Booked up

■ Considerable cash is tied up in Lady Thatcher's memoirs; little of it went into distributing the tome to those journalists who waited to receive their copy on the due day.

Cold scribblers assembled outside the Press Association building in Fleet Street yesterday morning to be given advance copies.

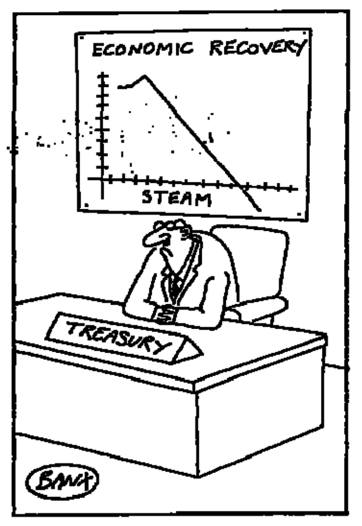
They were greeted by a solitary young woman, whose job it was to hand them out, check the orders, and then place the books into envelopes. Reviewers kicked their heels outside for half an hour.

Impatient queue-jumpers were accorded appropriate Thatcherite treatment; they were ejected back on to the street.

Flaw space

■ An Englishman's home is his castle. Keith and Mary Baker were determined to defend theirs.

In April local councils across the UK introduced the replacement for the much-hated poll tax, one of the then Mrs Thatcher's less successful ventures into social



engineering.

The new tax bears the rather anodyne name "council tax". It works simply; the more valuable your house, the higher the level of tax you pay.

Many homeowners are protesting that their houses have been over-valued, and that the tax they must pay is therefore excessive.

But from the Bakers' Hertfordshire battlements came the protestation that they were paying *too little*.

They told the Journal of Public Finance that their appeal has a rational basis. A low valuation for tax purposes might mean they won't be able to sell their house for the sum they want. Result? Happiness all round. The taxman gets an extra £100, money which the Bakers think is well spent.

Zola returns

■ The latest barricade behind which French politicians are mustering in the interminable Gatt negotiations is not wheat but popcorn. They say French cinema is being engulfed by Hollywood.

But they are drawing strength from *Germinal*, Claude Berri's newly released film version of the tough novel by Emile Zola.

In its first week in Paris, *Germinal* shot straight to number one, attracting an audience of 170,000. Its nearest rival – the Hollywood film *The Fugitive* – only managed 86,000. *Germinal* is now hailed as France's bulwark against US invasion.

But the Parisian intelligentsia – regarded as prehistoric in some quarters – faces a short-lived victory. Other dinosaurs – featuring in *Jurassic Park*, the movie – arrive in Paris on Wednesday.

Political priority

■ Peter Bottomley, the Conservative MP and former Northern Ireland minister, sniffs winds of change in Ulster. To help them along he now writes columns for the Irish News, a Belfast daily aimed mainly at the Catholic community in Northern Ireland. Tom Collins, the paper's editor, hopes to heal sectarian divisions by employing a diverse bunch of columnists.

Bottomley's columns preach reconciliation between religious, political and ethnic enemies, in Northern Ireland and elsewhere. He accepts that chances of his writing having much impact on political extremists are slim. "But you always live in hope," he says.

More hope than tact perhaps. For in one column he writes: "Why is the turnover among party leaders in Northern Ireland so infrequent?" and continues that if there "is seldom a change of leader, political change may be more difficult".

That sort of thing may not go down well with his fellow Irish News columnist and Ulster politician, Ian Paisley.

Clerical error

■ Britain's two main opposition parties, Labour and the Liberal Democrats, eagerly rushed out statements congratulating Nelson Mandela and F.W. de Klerk on their joint winning of the Nobel peace prize on Friday.

But more haste, less speed; both spelt the South African premier's name incorrectly.

John Smith, the Labour leader, plumped for "de Clerk", while Sir David Steel, Liberal Democrat foreign affairs spokesman, settled on "DeClerk".

FINANCIAL TIMES
Monday October 18 1993

Curb on blood products may spark trade dispute

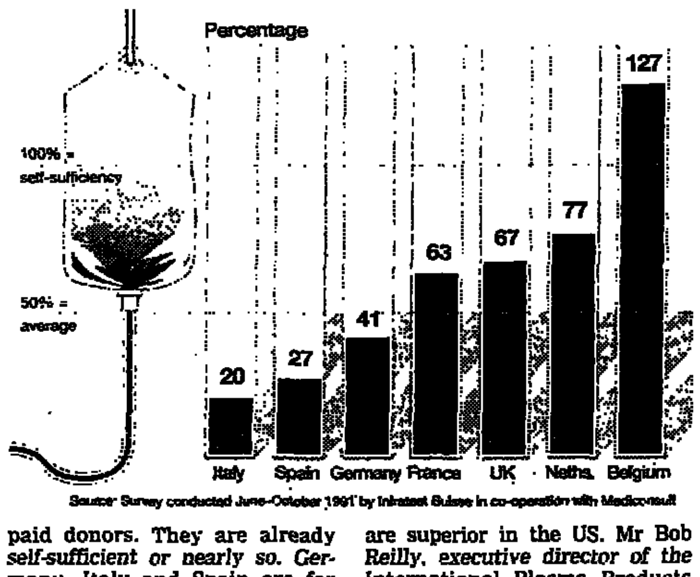
By Clive Cookson, Science Editor, in London

A FRESH trade dispute is brewing as the European Community moves to restrict and eventually ban imports of US blood plasma and related products, currently worth $650m a year.

Plasma importers are lobbying hard in Brussels against the proposed restrictions – and the US government is preparing to intervene on their side if necessary.

The EC in 1989 adopted the goal of eventual "self-sufficiency through voluntary unpaid donations" after blood products, mainly from the US, infected several thousand Europeans with the Aids virus, HIV. But until this year, little had been done to implement the policy.

European lifeline: plasma self-sufficiency



Source: Survey conducted June-October 1991 by Inkstest Suisse in co-operation with Medicoconsult

Europe uses 6.3m litres (11.1m pints) a year of plasma, the clear protein-rich fluid in which blood cells float. Half of this comes from paid American donors. Most is shipped as frozen plasma from which medical products such as Factor VIII, immunoglobulins and albumin are extracted.

Prompted by resolutions in the European Parliament, the Commission is backing measures to boost production from volunteer donors and phase out imports. These will be considered by EC health ministers in December.

Three countries – Belgium, France and the Netherlands – are leading the way with national legislation to ban products from paid donors. They are already self-sufficient or nearly so. Germany, Italy and Spain are far more dependent on imports.

Advocates of self-sufficiency and voluntary donation include the Red Cross and most national blood collection agencies. They say that paid donors are more likely than volunteers to be infected with sexually transmitted and blood-borne viruses – and that paid donation unfairly exploits poor and vulnerable people.

On the other side are commercial manufacturers, who claim that procedures for screening plasma and eliminating infection are superior in the US. Mr Bob Reilly, executive director of the International Plasma Products Industry Association, said: "From our point of view, European 'self-sufficiency' is a trade barrier and any attempt to stop $650m worth of US imports on 'safety' grounds is unjustified protectionism."

Caught in the middle are patient groups such as the European Haemophilia Consortium, which supports self-sufficiency from unpaid donors as a long-term objective, but rejects "any unrealistic timescale for implementation" that would disrupt supplies of Factor VIII.

Russian parties to advocate reform

By Leyla Boulton in Moscow and Gillian Tett in Novgorod

TWO powerful electoral blocs to compete in Russian parliamentary elections on December 12 were formed yesterday.

Russia's Choice, promptly dubbed "the ruling party" by its critics, was established in Moscow by supporters of President Boris Yeltsin. Deputy prime minister Sergei Shakhrai set up a rival Party of Russian Unity and Accord in the town of Novgorod. Both parties will be competing for the pro-reform vote.

Under the slogan "Stability, Family, Property and Motherland", Mr Shakhrai is advocating market reforms devoid of radicalism, and the transformation of Russia into a genuine federal state devolving economic power to the regions.

Mr Victor Prihodin, an official from Ryazan province, summed up the mood of the delegates in Novgorod: "The regional issue is the key issue now. We are fed up with being dictated to by leaders in Moscow."

Mr Yegor Gaidar, first deputy prime minister responsible for the economy who is the leader of Russia's Choice – an electoral bloc grouping several "democratic" parties and movements – promised a radical platform of unpopular but vital economic reforms. Its trump cards include unrivalled access to state-controlled media and an extensive provincial network run by Democratic Russia, the country's biggest collection of anti-Communist parties.

Its symbol is Peter the Great, the great reformer whom President Yeltsin likes to compare himself with. Its motto is "Freedom, Property, and Legality".

Claiming that financial support came exclusively from the private business sector, organisers denied suggestions that Russia's Choice would enjoy unrivalled access to government funds.

But with the majority of the cabinet included in the movement and 11 ministers and presidential advisers leading its electoral list, it is difficult to see how this cannot be the case.

A fourth pro-reform bloc is being formed by Mr Grigory Yavlinsky, the prominent economist who has his eye on later presidential elections.

More conservative forces, including neo-communists and nationalists, are also considering alliances in the run-up to the election.

BBC issues writ in global TV row with News Corp

By Raymond Snoddy, in London

BBC World Service Television has issued a writ against Mr Rupert Murdoch's News Corporation in an increasingly bitter row between the two organisations over the expansion of global television news.

The BBC acted after Mr Murdoch's lawyers threatened to terminate its 10-year contract with the Murdoch-controlled Star TV system in Asia.

Mr Murdoch's lawyers threatened to cancel the deal if the BBC went ahead with plans to launch an Arabic language television news service for the Middle East early next year.

The legal clash reflects the intensifying battle in the growing market for global satellite television. Mr Murdoch plans to take Sky News, 50 per cent-owned by News Corp, around the world particularly to Asia. He wants to blunt BBC television's ambitious plans to launch services in local languages around the world.

Mr Bob Phillis, chairman of World Service Television and deputy director-general of the BBC, said last night: "It is an essential part of our future strategy to develop World Service Television as a global news and information service."

BBC World Service Television has agreed with a leading Middle East industrial group to launch a 24-hours-a-day Arabic news service. The service, which is likely to be worth about £200m over 10 years to the BBC, would be carried on the Arabsat satellite. It would be available throughout north Africa and the Middle East.

The service, which will operate separate London studios and newsrooms, will draw on the strengths of the BBC World Service Radio's Arabic service.

News Corporation's executives were unable to comment last night but the company is likely to argue that the areas covered by Arabsat overlap with the areas covered by Asiasat, the satellite that carries Star TV.

The BBC has taken legal action in the Chancery Division of the High Court in London "to clarify its relationship" with Star TV. The Corporation has issued a writ seeking a formal declaration from the court that the contract allows it to go ahead with the proposed Arabic channel.

BBC executives believe there is no connection between an English language service for Asia and an Arabic language channel for north Africa and the Middle East.

THE LEX COLUMN

Assured of a future

Wednesday's vote on the introduction of corporate capital is as close as Lloyd's will get to a make-or-break decision. Rejection threatens the resignation of Lloyd's management. Even a delay would scupper the introduction of corporate membership for 1994. While that would give disaffected Names time to press for settlement of legal claims, there is little doubt that potential providers of corporate capital will look elsewhere to take advantage of the turn in the cycle.

The immediate need for corporate capital looks less acute than earlier in the year. Individual Names have not deserted in the numbers anticipated. Capital from that source next year is likely to be only a little lower than this. The spate of Bermuda reinsurance companies will also underwrite London market risks.

It is possible that the introduction of £1bn in corporate capital will contribute to a softening of rates in popular areas such as motor. But it is difficult to argue that blocking corporate capital is the best way to tackle the problem.

The 1991 underwriting year will bring further large losses for existing Names. New Names may not come forward in future even if the present generation keeps faith. In the long run Lloyd's needs new sources of capital to maintain critical mass. The market's management should certainly reaffirm its commitment to rationing the inflow of capital.

The onus is also on managing agents not to accept more capital than can be profitably allocated to syndicates. Preventing periods of feast and famine requires commercial discipline and increased professionalism. A vote in favour of the introduction of corporate members would be a large step in that direction.

UK electricity

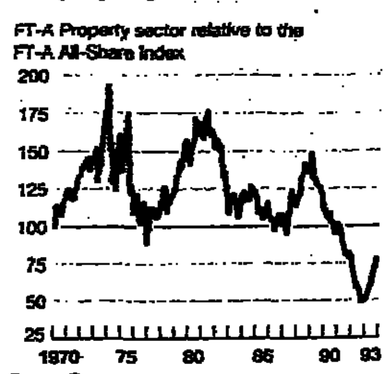
National Power and PowerGen have sensibly kept a low profile in the most recent debate about the future of coal. The two generating companies did nicely from the deal struck in March, and the reduction in coal stocks will allow them to reduce working capital substantially in coming years. There was, however, an expectation that they would take extra coal to support some mines, and while the encroachment of competing fuels provides some excuse, their reluctance to do so will have won them few political friends.

That comes at a time when electricity pool prices and the generators' market dominance is under investigation by the regulator. He is under pressure to act against the generators because spot prices have risen. National Power and PowerGen can point to their declining market share, but they still control all of the marginal plant which dictates the pool price. If the regulator decides that such market power is unacceptable he faces a choice of devising a market solution to solve it or making a reference to the Monopolies and Mergers Commission.

Cynics have suggested that no reference will take place while the government still wants to sell its 40 per cent stake in the generators. Yet a reference remains a real possibility since market solutions will not be easy to find. Those who are pencilling in a secondary share offer for next July may just be in for a disappointment.

UK property

FT-A Property sector relative to the FT-A All-Share Index



Source: Datastream

UK property

When the main reason for believing shares will go up is based on the view that everyone else believes they will go up, it is probably time to sell. For that reason, there is room for nervousness about the UK property sector. By most objective measures, property shares have raced up too far, too fast. With the FT-A Property sector having risen 2.3 times since Black Wednesday, property shares should at least linger a while for the underlying fundamentals of the property market to catch up.

But such caution takes little account of the abandon of fund managers with asset allocation targets to meet. The short-term yield attractions of both property shares and direct property is still enticing investors into both markets, creating a virtuous circle of demand. Property companies have hardly been slow to exploit the favourable sentiment by tapping shareholders for some £1.4bn this year. But even that has seemingly not dampened the ardour.

Any cuts in interest rates fuelling equities and lowering dividend yields could lead to another upward spurt in property shares. But for the run to be sustained much further will depend on prospects for income growth. Although the rental market may be bottoming out, growth is unlikely to resume before 1995.

In the meantime, property shares will be vulnerable to jolts. A reversal of interest rate trends would be a nasty surprise. Any concrete proposals from the government to alter upwards-only rent reviews could also precipitate a retreat.

BAT Industries

BAT Industries' shares are only a shade below the level from which they fell on Marlboro Friday in April. If Philip Morris can take the blame for the derating – thanks to its strategy of discounting – it is also partially responsible for the bounce. Investors have decided that the US company is cheap, dragging BAT up in sympathy. To the extent that US cigarette prices have stabilised it is certainly easier to take stock of the damage. BAT's operating margins in US tobacco have fallen by 10 percentage points. Profits from that business are likely to fall by more than half this year.

It seems too much to hope that cigarette prices might soon be on the up. Even the reduced margins now being earned are respectable by the standards of other markets.

President Clinton's proposed tobacco tax remains a threat. A tax anywhere near the $1-a-pack suggested would accelerate the shrinkage of the US cigarette market through the second half of the decade. While pricing pressures remain, it will be difficult to use the increased duty as cover for widening margins.

The comfort is that US tobacco will probably account for less than 20 per cent of BAT's profits this year, down from 45 per cent at the end of the 1980s. The balance of risks now lies squarely in financial services, where BAT is enjoying better luck. Even at around 500p it might be argued that the shares do not reflect the full value of Eagle Star, Allied Dunbar and Farmers – but that seems an occupational hazard for a conglomerate.

Bonn cereals dispute

Continued from Page 1

of cereals which was unexpected.

Although Chancellor Helmut Kohl has written to Commission president Jacques Delors defending Germany's case, Brussels regards this posture as an infraction of EC law.

If the dispute is not resolved, legal action could result, and Brussels says it will claw back any illicit German aid at the end-of-year clearing of accounts in financial flows between the Commission and member states.

Threat to 400,000 jobs

Continued from Page 1

already taken drastic action to cut the number of their direct suppliers from around 1,250 on average in 1988 to 900 now, but the total is expected to drop to around 400 by 1997.

The greatest challenge to improve productivity in the industry lies among the second-tier suppliers, often small and medium-sized companies "where awareness of means to improve competitiveness is least advanced", says the report.

FT WORLD WEATHER

Europe today

A high over the British Isles, northern Germany and Poland will cause cool but sunny weather in north-western Europe. During the night, the temperature will drop below freezing. Fog banks may develop. Clouds and rain will affect northern Ireland and Scotland later today.

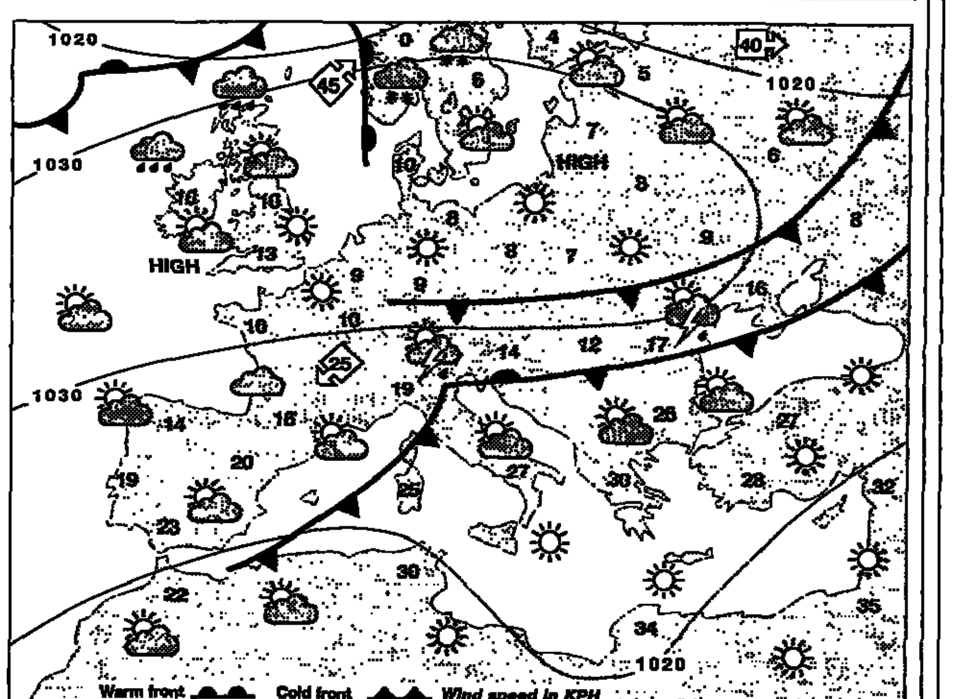
Rain is expected along the Norwegian coast, but this will fall mainly as snow inland. Winds will reach gale force from the south-west along the coast.

In the Mediterranean countries, it will be mainly sunny except for parts of Spain where clouds will occasionally cover the sun. In northern Italy and in the Balkans showers may develop.

Five-day forecast

High pressure will remain dominant later this week. It will stay mainly sunny and dry in north-western Europe. However, on Wednesday it will turn cloudy with some isolated showers.

From Wednesday a new high will develop over the Atlantic, causing calm weather later this week. Unstable conditions in the western parts of the Mediterranean will cause showers along the eastern coast of Spain and in southern France. Snow will persist over Scandinavia.



Situation at 12 GMT. Temperatures maximum for day. Forecasts by Meteo Consult of the Netherlands

TODAY'S TEMPERATURES

	Maximum		Belfast	fair	10	Cardiff	sun	11	Frankfurt	sun	10	Malta	sun	28	Rio	sun	25
	Celsius		Belgrade	cloudy	22	Chicago	cloudy	16	Geneva	fair	12	Manchester	fair	11	Riyadh	sun	34
Abu Dhabi	sun	37	Berlin	sun	9	Cologne	sun	10	Gibraltar	fair	21	Manila	shower	30	Rome	sun	25
Accra	sun	30	Bermuda	fair	29	D' Salaam	fair	30	Glasgow	fair	10	Melbourne	shower	14	S. Frsco	fair	20
Algiers	fair	26	Bogota	fair	20	Dakar	sun	30	Hamburg	fair	10	Mexico City	fair	22	Seoul	fair	20
Amsterdam	sun	10	Bombay	shower	32	Dallas	fair	30	Helsinki	fair	6	Miami	fair	31	Singapore	shower	30
Athens	sun	29	Brussels	sun	10	Delhi	sun	33	Hong Kong	shower	30	Milan	fog	19	Stockholm	sun	6
B. Aires	rain	19	Budapest	shower	12	Dubai	sun	37	Honolulu	fair	30	Montreal	cloudy	13	Strasbourg	cloudy	10
B.ham	sun	11	C.hagen	fair	10	Dublin	fair	10	Istanbul	sun	28	Moscow	cloudy	5	Sydney	shower	19
Bangkok	cloudy	33	Cairo	sun	35	Dubrovnik	sun	27	Jersey	sun	12	Munich	fair	8	Tangier	fair	21
Barcelona	fair	20	Cape Town	fair	20	Edinburgh	fair	11	Karachi	fair	40	Nairobi	shower	28	Tel Aviv	sun	34
Beijing	sun	22	Caracas	cloudy	32	Faro	cloudy	21	Kuwait	sun	37	Naples	sun	27	Tokyo	rain	18
									L. Angeles	fair	21	Nassau	fair	32	Toronto	cloudy	13
									Las Palmas	fair	24	New York	fair	23	Tunis	sun	30
									Lima	sun	25	Nice	fair	20	Vancouver	cloudy	13
									Lisbon	cloudy	19	Nicosia	sun	33	Venice	shower	19
									London	sun	13	Oslo	cloudy	6	Vienna	cloudy	8
									Lux.bourg	fair	9	Paris	cloudy	10	Warsaw	sun	8
									Lyon	fair	15	Perth	fair	21	Washington	shower	24
									Madeira	cloudy	22	Prague	fair	8	Wellington	cloudy	16
									Madrid	cloudy	18	Rangoon	fair	35	Winnipeg	cloudy	8
									Majorca	cloudy	23	Reykjavik	cloudy	4	Zurich	cloudy	9

FINANCIAL TIMES
COMPANIES & MARKETS
Monday October 18 1993

INSIDE

French privatisation shares set to rise

Shares in Banque Nationale de Paris, the bank spearheading the French government's privatisation programme, are expected to rise to a premium when they start trading this morning. Page 20

Samsung eyes Kia

Kia Motors, South Korea's second largest vehicle manufacturer, may become the target of the country's first takeover bid. Samsung, the big electronics conglomerate, has increased its shareholding. Page 20

Bad time for Sculley

John Sculley, who had hoped to orchestrate a graceful departure from Apple Computer after 10 years at the helm of the personal computer company, was last week forced into an abrupt resignation. A year ago, he might have left Apple as a hero. Page 19

Mexico moves on mortgages

The Mexican government is set to introduce legislation that will facilitate the development of a market in mortgage securities. Page 19

Passion in home furnishings

Vittorio Radice (left), managing director of Habitat UK, hopes to display his vision for the home furnishings retail chain with the opening of the revamped flagship store on the King's Road in Chelsea, London. He will attempt to convince customers that Habitat's future lies in recapturing its past. "We have put one word back into the equation – passion," he says. Page 18

Judgment expected in B&C case

A High Court judge is expected to award substantial damages today against Samuel Montagu and Quadrex Holdings in the long-running litigation brought against them by British & Commonwealth, the financial services group that collapsed in June 1990. Page 18

Former 3i head for Tring

Alan Wheatley, former chairman of the 3i venture capital group, is to become chairman of Tring International, the UK publisher and distributor of cut-price compact discs and cassettes, ahead of a planned listing. Page 18

Market Statistics

Companies in this issue

Patient deaths pose threat to Zovirax rival

By Paul Abrahams in London and Emiko Terazono in Tokyo

SUPPLIES of Usevir, the only licensed effective competitor in the world to Zovirax, Wellcome's herpes and shingles treatment, have been halted in Japan following three deaths among patients.

The development is a severe *blow to Bristol-Myers Squibb*, the US pharmaceuticals group which in 1989 acquired the global marketing rights for the drug, excluding Japan.

Usevir, also known as Bvarau, was only launched on September 3. Industry analysts expect the medicine to be withdrawn completely *from the Japanese market*.

The medicine has reached late-stage clinical trials in the US and is one of the most important compound drugs in Bristol-Myers Squibb's pipeline. The company believed the drug was capable of generating revenues of $1bn by the late 1990s.

The group urgently needs new products because the US patents of the heart-drug Capoten, its top-selling medicine with revenues of $1.6bn, expire in 1995.

The Japanese company with marketing rights to Usevir is Nippon Shoji, the Osaka-based pharmaceuticals wholesaling group. The rights were acquired from Yamasa Shoyu, a small Japanese company which invented Usevir.

Nippon Shoji had hoped to gain a significant share of Japan's Y25bn ($235m) shingles market, *currently dominated by Zovirax*.

The deaths in Japan are understood to have been caused by simultaneous use of Usevir with an anti-cancer agent called fluorouracil. The incidents are in spite of warnings on the drug's packaging against not to use the medicine with certain anti-cancer *agents*.

The Japanese Health and Welfare Ministry has ordered Nippon Shoji to dispatch emergency instructions to medical institutions warning against the use of the drug with fluorouracil, prescribing the drug to patients who have been treated for cancer, and prescribing the drug to patients taking medication which cannot be confirmed.

Nippon Shoji has also sent staff to warn of the dangers of the side effects.

Trafalgar plans third rights issue

By Roland Rudd in London

A NEED for yet more write-downs on its property portfolio will this morning lead Trafalgar House to announce a rights issue of up to £400m ($600m) its third cash call within two years.

The UK construction and engineerilig group, in which the Jardine Matheson-controlled Hongkong Land has a 25 per cent stake, will also confirm that Mr Allan Gormly is to stand down as chief executive next August to become chairman of Royal Insurance. He will remain on Trafalgar's board.

He will be replaced as chief executive by Mr Nigel Rich, managing director of Jardine Matheson in Hong Kong.

The group's advisers, Robert Fleming and Schroders, have recommended that the group strengthen its balance sheet by asking its shareholders for *money instead of making* "fire sale" disposals. Although Trafalgar still plans to sell its hotels, including the Ritz, it will do so when the market improves.

The issue is needed because of further property write-downs and the equity requirements for its growing engineering and construction division. The group's net debt varies from £250m to £500m on a seasonal basis.

Trafalgar had hoped to wait until mid-December when it will announce its full-year results to unveil its latest rights issue. But market speculation that it is planning to tap shareholders for cash forced it to bring forward its announcement to today.

Shareholders may be weary at being asked for more finance for their loss-making company. But Trafalgar is expected to argue that its new board, including a new finance director, Mr David Gawler, from Jardine Matheson, believes the company is significantly undercapitalised for the level of its business.

Roland Rudd looks at issues behind the Lonrho board dispute

A friendship splits over the way forward

LONRHO'S big institutional shareholders have given unequivocal support to Mr Dieter Bock's attempts to stamp his authority on the conglomerate with the appointment of non-executive directors.

The German financier, who was appointed earlier this year as joint chief executive with Mr Tiny Rowland, remains confident that tomorrow's board meeting will accept his nominated non-executives: Mr Peter Harper, director of Hanson, the conglomerate, and Mr Steven Walls, chairman of Albert Fisher, food processor and distributor.

Mr Bock has had support from four big institutional shareholders: Fidelity Management Research, the US investment fund, with 8.9 per cent; Genting, one of Malaysia's biggest companies with 3.9 per cent; PDFM, the Union Bank of Switzerland fund management arm with 2 per cent and Postel, with 1.5 per cent.

THE disagreement between Mr Tiny Rowland and Mr Dieter Bock over the appointment of non-executive directors to Lonrho is more than an arcane dispute over corporate governance.

If tomorrow's board meeting gives the go-ahead to the appointments, the balance of power within the company would swing irrevocably in favour of the German financier. It would also signal *a radical* shake-up at the top of the company. The new directors would establish an audit committee to monitor its financial performance and take a fresh look at the remuneration of existing executive directors.

Adding to the uncertainty is the fact that the board opinion is *finely balanced. The allegiance of* Mr René Leclézio, Lonrho's chairman, is not in doubt, but Mr Rowland can only be confident of retaining the continued support of enough other directors to give him a majority of one on the 12 man board.

It is a far cry from the arrival *of Mr Bock* when he acquired his 18.8 per cent stake at the start of the year. Then the joint chief executives described themselves as "indivisible".

Mr Bock left the delicate task of changing the board's structure until after he had completed restructuring most of the group's complicated mix of businesses. Restructuring had the enthusiastic support of Mr Rowland, who has been able to spend more time in Africa. *Mr Bock was confident* that Mr Rowland was ready to approve the appointment of two non-executives.

But a board meeting earlier this month put off a decision under pressure from Mr Rowland who felt the full-time directors should first meet Mr Bock's proposed *non-executives*.

If tomorrow's board meeting does not approve the appointment of Lonrho's first non-executives for two decades, Mr Bock may put the issue to shareholders at an extraordinary general meeting. He would only risk this as a last resort since it would publicly set the two men against each other.

Some analysts are surprised Mr Bock did not expect opposition from Mr Rowland. The latter has been opposed to non-executives ever since the "straight eight" directors unsuccessfully tried to remove him in 1973.

However, earlier this year, he indicated his support for the "right" candidates who would make a positive contribution to the running of the board.

Then over the last few months internal politics began to give the issue a new significance.

Key Lonrho directors began to shift their loyalty from Mr Rowland, who has run the group for more than 30 years, to Mr Bock. The beginnings of a split have developed on the board which broadly reflects the different working patterns of the two chief executives.

Mr Bock likes to be at his desk by 8.30am. By the time he arrives for work he often finds Mr Robin Whitten and Mr Philip Tarsh, both accountants with special responsibility for finance, and Mr Nick Morrell, another director, are already in their offices. The three directors have formed a strong bond with Mr Bock.

In contrast, when Mr Rowland is in London he usually arrives at the the group's Cheapside headquarters at around 10.30am. This is the preferred starting time of two of his most loyal directors: Mr Robert Dunlop and Mr Paul Spicer. Two years ago Mr Rowland promoted them to joint deputy chairman.

Yet Mr Bock was still taken by surprise at Mr Rowland's decision to delay the appointment of non-executives. *Mr Rowland* had announced in January that he was planning to retire in three years. He also continued to say that Mr Bock's appointment as joint chief executive had solved the group's succession problem.

But the 75 year-old entrepreneur has a habit of falling out *with old friends*.

After Mr Rowland won his battle with the "straight eight" he became friends with the Kuwaiti Sabah Brothers, Sheikhs Nasser and Hamed, who took a stake of about 26 per cent. But in 1975 they sold their shares after many of their demands, including the *appointment of non-executives*, had been ignored.

Even Mr Mohamed Al-Fayed, who Mr Rowland never forgave for winning control of the House of Fraser, was once a friend and appointed to the Lonrho board.

Mr Rowland will soon be 76, though, and may not relish the *prospect of another row. Further*more, Mr Bock remains emollient, softly-spoken, and respectful of Mr Rowland, which may lessen the chances of a feud.

This is part of the reason why Mr Bock remains confident that Mr Rowland will tomorrow agree to the appointment of the two *nominated non-executives*.

A number of Mr Rowland's close directors, however, are unlikely to urge him to agree to Mr Bock's demands. They are aware that new directors would radically change Lonrho.

The non-executives plan to join the group's remuneration com*mittee and re-evaluate directors'* pay. They will also determine what to pay Mr Bock, who has not drawn a salary since becoming joint chief executive.

They would almost certainly bring an end to Lonrho's practice of allowing directors to draw their pension as well as their salary when they reach 65. Mr Roland, Mr Leclézio and Mr Spicer are all understood to be drawing their pension as well as their annual salary.

They will also set up the company's first audit committee. A reduction in the estimated £20m ($30m) annual costs of running the headquarters is likely to be one of its first tasks. One way to achieve this would be to cut head office staff from the current 160 and to cut executive board members, currently 12, by half.

Mr Rowland's closest directors are not eager to vote for the appointment of non-executives who may hasten their own departure. The outcome will depend on whether Mr Rowland is willing to cede control of the company he has dominated for three decades.

Sowing seeds of doubt in the taxpayer's mind

Economics Notebook
By Alison Maitland

There was a lot of grumbling about "red tape" from farmers this year when they were asked to complete the complex forms needed to claim compensation for cuts in EC production subsidies.

But one farmer with 2,000 acres in Britain's rich cereal-growing region of East Anglia was determined to look on the bright side. He calculated that the payment he would receive for completing the 10-page document would amount to £12,500 ($18,875) per page.

Out of his total income of £125,000 from the EC, moreover, he would be paid nearly £25,000 simply for *not* growing cereals on part of his land.

As the first compensation cheques arrive through the post this month, it will be possible to see exactly how much taxpayers' money goes to supporting each farmer. Under last year's reform of the Common Agricultural Policy, arable farmers receive cash in hand to compensate them for a 29 per cent cut in cereal support prices over three years. To be paid, however, they must leave idle, or "set aside," 15 per cent of their land.

The reform of the CAP was *seen as* vital to ending the worst excesses of agricultural protectionism. It was designed to pave the way for a Gatt agreement which requires the EC to cut the value and volume of cereal export subsidies by 36 per cent and 21 per cent respectively over six years.

But it is by no means certain things will work out that way. To begin with, subsidising farmers for setting their land aside could run foul of taxpayers.

Agricultural subsidies to producers alone cost EC consumers and taxpayers Ecu66bn (£51bn) last year, according to the OECD. Because member states have undertaken to *cushion farmers from* the cuts in cereal support prices, that overall burden will remain much the same until and unless production falls.

However, as support shifts to highly visible payments, so taxpayers will be more likely *to question the cost. Set-aside* payments are due to rise to about Ecu1.2bn in 1995.

The farmers themselves could also jeopardise the scheme. They dislike set-aside because it goes against their instincts for making the land productive.

Critics of the scheme say it was hampered from the start by the exemption of small farmers producing less than 92 tonnes of cereals a year on the grounds that they would be unfairly penalised. This measure alone is estimated to reduce the overall set-aside area from 15 per cent of EC arable land to between 9 and 12 per cent.

Experience in the US, where set-aside has operated since the 1930s, shows there are also *inherent problems* which lessen the chances of the scheme controlling output:

- Farmers put their poorest *land into set-aside*
- Yields on the remaining land rise as farmers use more labour, machinery and chemicals to compensate for the lost production
- Yields increase when land enriched by fallowing comes back into production.

To overcome the first of these problems, the European Commission initially required farmers to "rotate" the area they set aside each year for six years, so that 90 per cent of their arable land was left fallow at some point during the scheme.

But it is now proposing, under French pressure, to limit the scheme to three years. Although the required set-aside area would be increased to 20 per cent, only 60 per cent of land would go out of production during the lifetime of the scheme. In other words, the richest land would probably remain untouched.

Meanwhile, there are already signs that yields have improved. The EC grain traders' association, Coceral, estimates that average yields are up about 5 per cent compared with last year on a harvest *that has fallen* only about 3 per cent to some 164m tonnes.

Yields tend to increase by about 2 per cent a year because of improvements in seed and fertiliser technology. The extra rise suggests more intense production, although it could be partly due to better weather.

Coceral estimates that the land in cereal production has fallen by only 7 per cent, lower even than the Commission's actual target of 8-9 per cent for the first year.

The Commission puts a brave face on all this, arguing *that the policy will work better* as prices fall. Some arable farmers may initially have found it worthwhile to forgo compensation payments in order to sell more crops. It says last year's harvest was poor and the fall from a more normal harvest would have been closer to 8 per cent.

Brussels also argues that the problem of more intensive *farming* on land in production will lessen as declining prices cease to cover the cost of extra inputs.

But the policy faces erosion on other fronts.

The commission has agreed to allow fixed as well as rotating set-aside from next season provided 20 per cent of the farm is taken out of production. This increases the prospects that only less fertile land will be affected.

Set-aside also depends on compliance. "If the problems the EC has experienced in enforcing its dairy quota - especially in Italy where they simply were never enforced - are any indication, then non-com*pliance could be a serious prob*lem," says Mr Michael Herlihy, an economist with the US Department of Agriculture, in a recent paper on US and EC set-aside.

Cereal farmers know last year's CAP reforms may not be the end of the matter. Some *fear they could face increased* set-aside requirements as the winds of free trade begin to blow into the EC's protected market. French farm unions claim more than 30 per cent of land would have to be left idle to meet the requirements of the Blair House farm deal between the US and the EC.

The industry has long been regarded as a special case. "A free trade policy for cereal production is seen as a bridge too far for policy-makers and farmers," says Mr Michael Murphy, an agricultural economist at Cambridge University, *in a* recent paper.

But as taxpayers begin to see the size of subsidies, especially *to the most prosperous* of the EC's farmers, the pressure for even more radical change may become unstoppable.

UK leads in European cross-border takeovers

By Peggy Hollinger in London

BRITAIN has jumped six places to first position in the European cross-border takeover league, with UK companies completing more acquisitions in Europe than their counterparts in any other country during the first nine months of the year.

At the same time the rate of cross-border activity in Europe has declined in the first three quarters, reflecting deepening economic difficulties in many countries. Foreign acquisitions by German companies are *expected to fall by as much as* 50 per cent this year.

A survey by cross-border mergers and acquisitions specialist, Translink, shows British companies completed 160 deals in the first three quarters, against 158 for all of last year.

So far, 810 cross-border deals have been completed by companies in Europe. Translink estimates that some 1,100 will be completed this year, a decline of 20 per cent.

The company said yesterday Britain's aggressive cross-border activity appeared to confirm its emergence from recession. "It seems we are slightly ahead in the economic cycle," Translink said.

The US, last year's leader with a total of 215 deals for 1992, fell to second place with 156 acquisitions for the nine months. *France holds third* place with 121 deals, compared with 202 for all of 1992.

Britain also remains the *most popular target*, with foreign groups snapping up 150 companies so far, against 196 in 1992.

Court decision today over B&C litigation

By Andrew Jack

A HIGH COURT judge is expected to award substantial damages today against Samuel Montagu and Quadrex Holdings in the long-running litigation brought against them by British & Commonwealth, the financial services group that collapsed in June 1990.

Mr Justice Gatehouse will make public in the Commercial Court this morning his assessment of damages following hearings which finished in March this year. His ruling follows an earlier judgment in May 1991 in which he determined that both Samuel Montagu and Quadrex were liable to pay damages to B&C.

The litigation was triggered by the 1987 takeover of Mercantile House Holdings by British & Commonwealth, the group now in administration.

The acquisition relied on an agreement that Quadrex, a Delaware corporation headed by Mr Gary Klesch, would buy Mercantile's wholesale broking division after B&C made a takeover bid.

After the acquisition, Quadrex did not have the funds to make the purchase, which led to B&C bringing a claim of damages for breach of contract of £200m against the abortive sale in 1988.

However, the judge ruled in 1991 that Quadrex could collect from B&C £20m-£30m to compensate for non-fraudulent misrepresentations during talks on the sale of its wholesale broking division.

B&C also claimed against Samuel Montagu, Quadrex's financial advisers, for negligent mis-statements made to the company by its head of corporate finance. Creditors to B&C are unlikely to receive any dividends as a result of the award in the next few months, because the original verdict is still on appeal.

Early last year the administrators estimated that creditors to B&C Holdings would eventually receive dividends of 23p in the pound and those to B&C Group Finance 37p before the outcome of the litigation.

Those involved in the trial have agreed that any appeals from tomorrow's decision will be heard at the same time as the appeals on the original liability case two years ago. These hearings have been scheduled for January 1995.

The costs to B&C alone have been more than £16m since proceedings began following the acquisition in 1987.

An attempt at reviving the Habitat habit

Swedish owner wants the home furnishings chain to return to its roots. Peggy Hollinger reports

MR VITTORIO Radice, managing director of Habitat UK, whips out a picture of six swarthy men intent on a serious game of boules. One lounges in a deck chair, munching his way through an overstuffed sandwich. "This is what I use to describe what Habitat is all about," Mr Radice says. Under the photograph is a single word – comfortable.

Tomorrow Mr Radice hopes to paint a fuller picture of his vision for the home furnishings retail chain with something slightly more obvious – the opening of the revamped flagship store on the King's Road in Chelsea, London. Here in a 1930s cinema restored to its former Art Deco glory, he will attempt to convince customers that Habitat's future lies in recapturing its past. "We have put one word back into the equation – passion," he says.

That philosophy is shared by Stichting Ingka, the trust set up by Mr Ingvar Kamprad, Sweden's guru of affordable chic and founder of the Ikea retailing phenomenon. It is almost a year to the day since the trust bought Habitat's European operations from Storehouse for £78m.

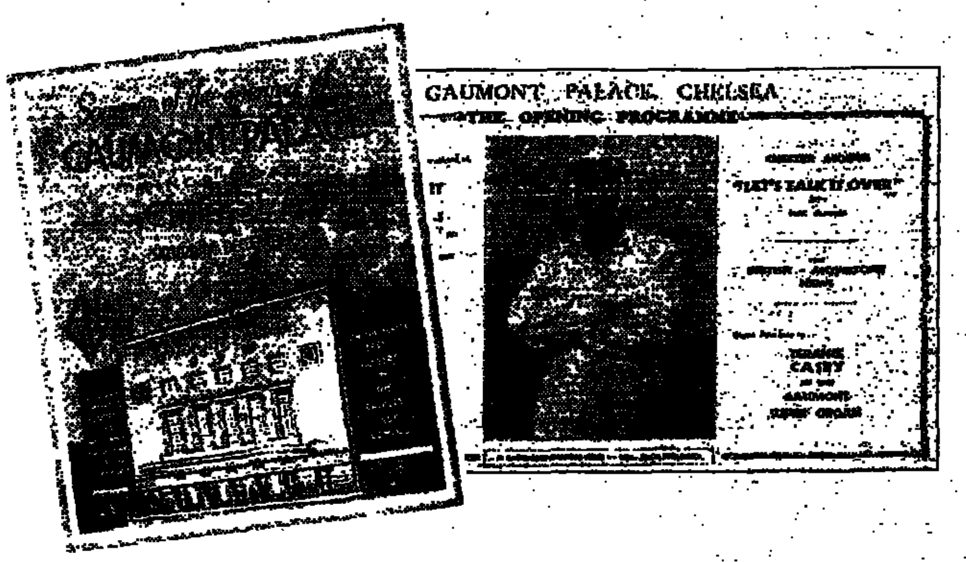
Mr Kamprad, like his UK managing director, believes the way forward for Habitat lies in returning to its roots as a retailer of quality design furnishings at affordable prices. Recently he wrote to Sir Terence Conran, Habitat's founder, to reassure him that Stichting intended to revive the spirit behind that first shop he opened on Fulham Road in 1964.

The mistakes of the past have been well documented. Sir Terence Conran's original concept lost its way in the mid- to late 1980s when new management sought to drive the company for dividend and volume growth.

While the continental businesses were left to follow their own path, the UK division had four management and strategy changes in six years, and made significant losses.

There have been few changes since Stichting took over last year. Many of the most significant shifts – such as abandoning the out of town wastelands and returning Habitat to its high street roots – had already been launched by Mr Radice when he arrived from a Milanese furniture company in 1990.

However, Stichting made what Mr Radice considers to be one of the most important decisions for the chain's future as an international brand. Within weeks of the takeover, Habitat's headquarters were moved from London to Paris. "Now we are seriously working to make this one business," Mr Radice says. "A global view can only [be achieved] if we are run as one business."



The two divisions will share an increasing proportion of products and ranges in their catalogues. Habitat UK's catalogue is already showing a greater emphasis on the simple, timeless furniture for which Habitat was originally renowned and which the French business never abandoned.

The design teams of both divisions are also encouraged to share the colour schemes and influences which form the basis of their furnishings. Shared sourcing and distribution are natural goals, which previously had been largely ignored.

Now, says Mr Radice, Habitat is back on track to make significant profits and is more focused on the type of customer it wants to attract than it has been for years. "We want a customer with some passion, some heart," Mr Radice insists. "One that has confidence to say THIS is the glass I like."

Comfort will be the driving force behind the product offer, rather than the creation of a stylised look such as that offered in Habitat catalogues of the 1980s. "Ours is a catalogue of ideas," Mr Radice says. "That was a hardware catalogue."

Mr Radice says he is determined to recreate the atmosphere that made Sir Terence's stores so popular. "It should be a place to meet, not to buy," he says. Thus, the plans for an elegant but affordable cafe – Italian of course – above the King's Road shop.

Habitat's commitment to opening new shops in unusual sites – much as Sir Terence sought out churches and cinemas for his original stores – is also part of Mr Radice's Habitat revival.

While most welcome the shift in emphasis which has become apparent over the last 18 months, there are those who warn of the dangers of becoming too focused on an image which does not have mass market appeal.

"There is a fine dividing line between being focused and limiting your potential," says Ms Hilary Monk of the market research organisation Verdict.

Sir Terence agrees. While praising the group's success in "throwing off the Storehouse glooms", he says: "It worries me that Habitat has given up some of the very straightforward, very everyday things we used to sell so successfully."

For the moment, however, Mr Radice has other things on his mind; most immediately, the relaunch of the King's Road site. To commemorate the occasion, he is frantically searching for the desert epic with which the Gaumont Palace cinema opened in 1934 – The Camels are Coming.

Mr Radice, a lively Italian proud of his unorthodox managerial methods, is also angling to make his entrance on the back of a camel. This time, however, the Stichting board may have other ideas.

Expanding Midland Independent plans to launch four new weeklies

By Raymond Snoddy

MIDLAND Independent Newspapers, publisher of the Birmingham Post and Mail, is planning to launch up to four new weekly newspapers in the next 12 months.

The new launches, which will at least start as free newspapers, are the latest signs of expansion by the management buy-out team at MIN led by chief executive Mr Chris Oakley.

Earlier this year the company bought 20 free weekly newspapers from Thomson Regional Newspapers. The company is also interested in the possibility of a significant newspaper acquisition outside its Midlands regional heartland.

The news of further expansion comes as Midland announced a fall in pre-tax profit for the six months to end June from £3.47m to £1.92m. The main reason for the drop was a £1.7m increase in interest charges flowing from the loan stock used in the acquisition of the Thomson titles.

Operating profit increased by to £7.8m (£7.3m) with margins continuing at more than 21 per cent. The acquired titles, which increased the company's reach into the east Midlands, generated profit of £260,000.

A flotation is getting closer for the group bought out from Ingersol Newspapers. It could happen towards the end of next year. No firm target date has been set because of uncertainties such as whether VAT is imposed on newspapers in next month's budget or whether a large acquisition comes along.

The Birmingham Post marginally increased its sales in the period while the Mail circulation dropped 3 per cent, the Coventry paper 1.5 per cent and the Mercury 3 per cent – all less than the regional average.

Former 3i chief for Tring ahead of SE flotation

By Sara Webb

MR ALAN Wheatley, former chairman of the 3i venture capital group, is to become chairman of Tring International, the privately-owned publisher and distributor of cut-price compact discs and cassettes, ahead of a planned Stock Exchange listing.

Tring expects to sell about £20m-worth of new and existing shares probably through a placing within the next few months, although UBS, the sponsor to the listing, said the details were still under discussion. The company wants a listing to help it expand in the UK and overseas. The flotation is likely to capitalise Tring at more than £45m, UBS said.

Mr Wheatley is currently a non-executive director of British Steel, Forte, Legal & General, and NM Rothschild.

Tring was set up in 1990 by Mr Mark Frey and Mr Philip Robinson, the joint chief executives who each own about 20 per cent of the company, and by Mr Mark Levinson.

It currently has a catalogue of more than 800 classical, jazz and pop titles. For the year to March it made pre-tax profits of £3.3m on sales of £16.6m.

Mr Philip Keane, finance director, said the pathfinder prospectus would be available in the middle of November.

CROSS BORDER M&A DEALS

BIDDER/INVESTOR	TARGET	SECTOR	VALUE	COMMENT
Union des Assurances de Paris (France)	Colonia (Germany)	Insurance	£1.3bn	Ends years of wrangling
Bell Atlantic (US)	Iusacell (Mexico)	Telecoms	£680m	Landmark 42% stake
Hoechst (Germany)	Copley (US)	Pharmaceuticals	£364m	Bid for first N Amer stake
Cyprus Minerals (Canada) /Lac Minerals (US)	El Abra (Chile)	Mining	£363m	Copper-bottomed breakthrough
Nestlé (Switzerland)/ Goplana (Poland)	Joint Venture	Confectionery	£50m	Production base for Nestle
Philip Environmental (Canada)	Burlington Environmental (US)	Waste	£49m	Warrants issue
Philip Environmental (Canada)	Nortru (US)	Waste	£15m	..finance buys
Caledonia Investments (UK)	Sun International Investments (S Africa)	Leisure	£29m	Planning 33% stake
Sema (UK/France)	SKDforetagen (Sweden)	Business services	£20.5m	Small Swedish privatisation
Kraft Jacobs Suchard (US)	Kaunas Confectionery (Lithuania)	Confectionery	£10.5m	Boosting east Europe presence

COMPANIES AND FINANCE

Mexico set to create market for mortgages

By Damian Fraser and Stephen Fidler in Mexico City

THE Mexican government is set to introduce legislation that will facilitate the *development* of a market in mortgage securities, according to Mr Guillermo Ortiz, under-minister of finance.

Mr Ortiz said the government "was willing to contemplate government intervention to extend guarantees of mortgages". The government may guarantee part of a loan over a given maturity, to help those who could not otherwise finance the purchase of a house or apartment.

The legislation, to be introduced after November, will include allowing property titles to be transferred to third parties without being certified by public notaries. Difficulties in transferring titles have inhibited the development of a secondary market in mortgages.

Mexico has an acute shortage of housing, in part because of the difficulty and high cost of obtaining a mortgage. But as inflation has fallen, loans of up to 10 years have become available and interest in the mortgage market has grown.

However, banks have complained about the legal obstacles in securitising mortgage and consumer loans. The lack of a secondary market in such loans has kept mortgage interest rates higher than they would otherwise be, and stifled demand.

Mr Ortiz concedes that the proposed legislation will not meet all of the bankers' demands. The legal process in taking possession of houses when a mortgage has been defaulted is long and uncertain. Mr Ricardo Guajardo, chief executive of Bancomer, Mexico's second-largest bank, says it can take about three years to win settlement in the case of a mortgage default.

The government is also planning to introduce next year a derivatives market to allow investors to hedge foreign exchange and interest rate risk, Mr Ortiz said. The government will first have to establish capitalisation rules for participants, he said.

Apple looks to next generation

Louise Kehoe on the US computer group's latest boardroom shuffle

MR JOHN Sculley, who had hoped to orchestrate a graceful departure from Apple Computer after 10 years at the helm of the personal computer company, was last week forced into an abrupt resignation.

The move by Apple's board to replace Mr Sculley, one of the better known and more articulate executives in the US, came as the company ended one of the most troubled years in its history. Last week, Apple reported a meagre $2.7m fourth-quarter profit, down 97 per cent on the same period last year.

Struggling to maintain its share of the PC market, Apple has repeatedly cut prices over the past year, paring gross profit margins from 43 per cent to less than 26 per cent in the process.

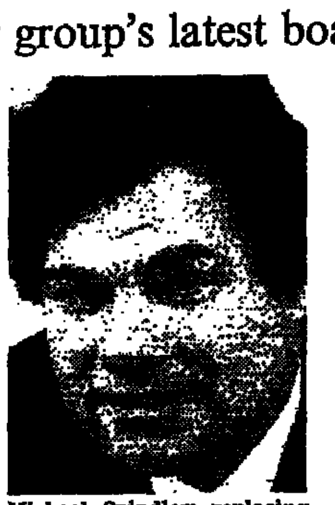
For Mr Sculley, the timing could not have been worse. A year ago, he might have left Apple as a hero who had led the company to record sales and profits and steered it toward emerging technologies. Instead, as Apple's financial problems deepened, he became the target of intense criticism, blamed for the company's woes.

Mr Sculley's desire to move on to new challenges has become increasingly apparent over the past two years. He seemed to be losing interest in the price and market-share battles of the PC market, enthusing instead about the new opportunities to be found in the confluence of computer, communications and consumer electronics technology, which he predicted would create a $3,500bn industry.

Speculation was rife that Mr Sculley would, before long, leave Apple – perhaps for a post in the Clinton administration or to form his own high-tech company, a move that he acknowledges is his dream.

Earlier this year, he made an unsuccessful bid for the top job at International Business Machines by proposing an audacious merger plan – combining Apple with the most profitable portions of IBM's business. Most of IBM's directors were too short-sighted to recognise the potential of his proposal, he later complained.

Few, however, had foreseen such an ignominious end to Mr Sculley's career at Apple. Even when, four months ago, he handed over the role of chief executive to his second in command, Mr Michael Spindler, Apple was at pains to deny that Mr Sculley was being forced to relinquish power.



Michael Spindler: replacing John Sculley at Apple

It now appears, however, that Mr Sculley, like his predecessor Mr Steve Jobs, fell victim to a boardroom dispute. Indeed, there are uncanny parallels between the circumstances, in 1985, when Mr Jobs was forced out of the company he co-founded, and Mr Sculley's untimely departure.

Mr Jobs was ousted when Apple, as it is today, was facing a financial crisis and its first Macintosh personal computer was failing to live up to expectations.

Similarly, Mr Sculley's departure coincides with disappointment over the performance of the Newton Messagepad, his pet project.

Mr Sculley turned "Steve's machine" into a huge commercial success, increasing Apple's revenues over his 10-year tenure from $600m to almost $8bn. However, he always seemed to harbour a desire to prove himself the equal of the young man he had displaced at Apple by creating his own technology breakthrough and becoming, like Mr Jobs, recognised for his "technology vision".

It will now be up to Mr Sculley's successors – Mr Michael Spindler, the new chief executive, and Mr Mike Markkula, Apple's new chairman – to determine whether Mr Sculley's Newton can become Apple's most important product technology for the 1990s.

Mr Sculley's legacy at Apple will also be judged, however, on the success of the technology alliances that he formed with IBM two years ago to develop microprocessor and software technology for the next generation of Apple personal computers.

The first of these "PowerPC" products is expected to be ready for market next year. That will be none too soon for Apple's new management team.

Credito Italiano sale expected in December

By Robert Graham in Rome

THE PRIVATISATION of Credito Italiano, the commercial bank 67 per cent owned by Iri, the state holding company, is expected to begin in early December.

The timetable has been firmed up following changes approved last week to Credito's statutes. They have been revised to include a 3 per cent ceiling on single shareholdings by new shareholders.

The aim of the 3 per cent limit is to encourage as wide a share base as possible. Within the government there were contrasting views, and Professor Romani Prodi, head of Iri, was reported to have been pressing for a maximum 2 per cent block.

The same ceiling will apply to Banca Commerciale Italiano, the second of Iri's large banks. The sale of Iri's 57 per cent stake in BCI is expected to begin next April.

Credito's privatisation was announced in September 1992. The original intention was to organise a trade sale, but a month ago a share offer, including a portion reserved for foreign institutional investors, was agreed.

In another privatisation development, Eni, the state oil concern, has appointed Rothschild to handle the valuation and flotation of its energy interests. The Rothschild brief indicates that the privatisation proposed by Eni chairman Mr Franco Bernabe is broader than initially envisaged.

Quek unit buys OTB from HK government

By Simon Davies in Hong Kong

GUOCO Group, the Hong Kong-based company controlled by the Malaysian Quek family, has completed the HK$4.46bn (US$577m) acquisition of the Overseas Trust Bank (OTB) from the Hong Kong government.

The deal was announced in July, but the price agreed to was a HK$420m premium to a subsequent asset valuation of the bank.

The OTB will be linked with Guoco's wholly owned subsidiary, Dao Heng Bank, to form Hong Kong's fourth-largest banking group.

Guoco announced that it would complete the flotation of the enlarged Dao Heng Bank before the end of the year. Guoco's purchase of OTB was partly funded by a HK2.8bn issue of preference shares, which will be convertible into Dao Heng shares once it obtains a separate listing.

Following the Dao Heng flotation, Guoco will become an investment holding company with interests which will include a majority stake in Singapore-based First Capital Corporation, and several property developments.

The sale of the OTB completes the government's successful turnround of several banks which collapsed during the mid-1980s.

At the price paid for OTB, the government will recuperate the costs of its 1985 rescue of the banking group.

CONTRACTS & TENDERS

COMPANIES AND FINANCE

Murdoch mulls new equity issues

MR RUPERT Murdoch, chairman of News Corp, is tempted by the recent surge in media share prices to raise A$4bn to A$5bn (US$3.3bn) by issuing new shares to telecommunications or other strategic partners, AP-DJ reports from Sydney.

News Corp last week announced plans to give existing shareholders a new class of shares that carry increased voting rights. This will allow the group to sell large parcels of conventional common stock to form strategic alliances without diluting Mr Murdoch's 30 per cent voting stake.

In an interview published over the weekend in The Australian, News Corp's flagship Australian newspaper, Mr Murdoch said the company did not need additional funds at this time.

However, "this does seem to be a moment of opportunity," he said. "There's a bit of a frenzy developing in terms of the media and investment and it looks like it may last for a while. This may be a window of opportunity to take a quantum step forward.

"We just want to be ready to do it should that opportunity arise. We could place up to 20 per cent of the company and raise A$4bn to A$5bn. We would be willing to do that," he told the newspaper.

"At today's prices we're valued at US$15bn to US$16bn. If we increase that by 20 per cent, that would give us enormous financial strength," Mr Murdoch maintained.

Share prices of media companies, particularly in the US, soared last week on news of a proposed merger between Bell Atlantic, a telephone company, and Tele-Communications, a cable television operator.

Investors bought shares in the hope of positioning themselves to cash in on an expected linking of telephone companies, cable TV operators, information companies, media concerns and film studios.

News Corp has film and satellite TV interests as well as newspaper and magazine units. The company's shares climbed 52 cents to A$11.62 on the Australian Stock Exchange on Friday.

Mr Murdoch said that any of the larger groups "who buy into us would provide further financial and industry strength.

"They could give us access to new technologies and cash, or just the cash. We have a feeding frenzy at the moment and like all feeding frenzies it won't last forever," he said.

Havas suffers downturn

By Alice Rawsthorn

HAVAS, the leading French leisure group, saw net profits fall by 3.4 per cent to FFr423m ($74m) in the first half of this year from the same period of 1992 and warned of lower net profits for the full year.

The group, which has extensive media and travel interests in France, said it had been affected by "sluggish trends" in its advertising businesses, billboard interests and travel activities.

Havas pushed up revenues by 4.1 per cent to FFr14.8bn in the first six months of 1993. The proportion of its revenue made outside France rose to 37.9 per cent from 33.8 per cent.

Kia Motors concerned as Samsung lifts stake

By John Burton in Seoul

KIA MOTORS officials expressed concern at the weekend that the company, South Korea's second-largest vehicle manufacturer, may become the target of the country's first takeover bid.

Samsung, the big electronics conglomerate, has increased its shareholding in Kia by 40 per cent to 9.6 per cent during the past three months, according to a new report from the Securities Supervisory Board.

This makes Samsung the second-largest corporate shareholder in Kia after Ford Motor of the US, which has 10 per cent. Mazda Motors of Japan has 8 per cent.

Samsung has made little secret of its desire to add vehicles to its list of activities. It is already taking its first step into the motor industry by starting truck production next year in co-operation with Nissan Diesel of Japan.

Samsung officials deny that the recent stock purchase represents the beginning of a takeover bid for Kia, explaining that it is part of a shift in the group's securities portfolio from banks to manufacturing companies.

But analysts point out that it is highly unusual for such a large investment to be made in one company.

Kia's ownership is fragmented for a Korean company, with 11.4 per cent held by employees and a 2.4 per cent interest belonging to the family of Mr Kim Ho-chul, its founder.

If Samsung is preparing a bid for Kia, it would be the first big merger or acquisition to occur in Korea through the purchase of large blocks of shares on the stock exchange.

Any such move would coincide with a proposed legal change next year that would eliminate rules that have prevented corporate raids via the stock market.

Investors are presently barred from acquiring more than 10 per cent of a company if they held less than that amount when the concern was listed.

There have been persistent reports on the Seoul bourse for the past year that Samsung is interested in acquiring control of Kia Motors, the flagship of the Kia group, Korea's eighth biggest conglomerate.

Korea's other motor companies, which include Hyundai and Daewoo, have argued that Korea could not support a fourth car manufacturer if Samsung began independent production.

The government cited overcapacity in blocking Samsung's proposed car joint venture with Chrysler in 1985.

Shares in BNP expected to trade at a premium

By Alice Rawsthorn in Paris

SHARES in Banque Nationale de Paris (BNP), the bank spearheading the French government's privatisation programme, are expected to rise to a premium when they start trading this morning.

BNP's new shares, which were sold at the unexpectedly low price of FFr240, were trading at FFr277 on the "grey", or unofficial, market late last week. Analysts expect the shares to rise to a similar level when trading begins.

"The original issue was so heavily oversubscribed that there is bound be to strong demand," said one analyst. "Also, the offer price is generally accepted as having been too low, which should make the institutions even keener to pick up stock in the market."

The BNP issue, which values the bank at FFr43bn ($7.5bn), was heavily oversubscribed. The institutional part of the issue was closed after only two days, having attracted applications for 12 times the number of shares available.

The public issue was five times subscribed, with some 2.8m investors applying for shares against the original target of 1m.

As a result, the government has increased the allocation of shares to the public by reducing the number earmarked for institutional investors and "hard core" shareholders. Even so, it has also rationed the shares given to the public from the original 40 to 15 each.

In spite of the high level of interest in BNP's shares, analysts do not expect the French to "stag" the issue by taking quick profits on their shares, as UK investors did in the 1980s privatisations.

This is partly because of the incentives offered to private investors to hold on to their shares, and partly because there is no tradition of "stagging" in France.

The next phase of the privatisation programme will be the announcement, expected today or tomorrow, of the next candidate for sale. The economy ministry last week said that the next issue would be either Rhône-Poulenc, the flagship chemicals company, or Elf Aquitaine, the oil and gas group.

Syndicated loan volume ahead of 1992 total

By Antonia Sharpe

THE volume of loan syndications in the first nine months of this year has beaten last year's total by $40bn, in spite of a fall in volume in the third quarter.

However, the rise in volume has not generated a similar rise in earnings for the banks. "Healthy bank balance sheets juxtaposed with a dearth of deals have driven pricing and fees down to record lows, to the dismay of lenders," said Investment Dealers' Digest and Bank Loan Report.

Loan syndications volume for the first nine months of 1993 stood at $388.3bn, compared with $348.5bn last year.

Third-quarter volume fell 14 per cent to $141.3bn from $164.3bn in the second quarter, but the third-quarter figure represented a 46.7 per cent rise over the same period in 1992.

Chemical Bank remained at the top of the global loan syndications rankings at the end of the third quarter, with more than $38bn in syndications volume. Citicorp also retained its second position, with $33bn, while J.P. Morgan rose from 11th position to third position, with nearly $22bn.

The top 10 deals closed in the third quarter of 1993 were: the Kingdom of Spain ($4.58bn), Sears Roebuck ($4bn), US West ($2.6bn), Chrysler Financial Corp ($2.5bn), British Aerospace ($2.3bn), Morgan Stanley Group ($2.2bn), AT&T Capital Corp ($2bn), Province of Ontario ($2bn), Seagram ($2bn) and Fleet Mortgage Group ($1.8bn).

Sales growth for Sandoz

By Ian Rodger in Zurich

SANDOZ, like its two Basle-based pharmaceutical competitors Ciba and Roche, enjoyed strong sales in the third quarter.

Group sales were up 9.7 per cent to SFr3.48bn ($2.44bn) in the quarter, led by by a 13.1 per cent jump in pharmaceutical division sales to SFr1.84bn.

The group also forecast further sales growth in the fourth quarter and said that its net income for the year would rise by more than 10 per cent from last year's SFr1.49bn.

Roche recently reported a third-quarter sales jump of 18 per cent to SFr3.6bn and Ciba an 8.3 per cent rise to SFr5.2bn.

CONTRACTS & TENDERS

INTERNATIONAL CAPITAL MARKETS

US MONEY AND CREDIT

Doubts over strength of bull run

JUST HOW low can US bond yields go? That question may be asked a lot on Wall Street over the coming week as the market dwells on a bull run which last Friday took the yield on longer dated issues down to levels not seen for a quarter century.

For amid the euphoria, there are straws in the wind indicating that some corporate Treasurers and top money managers think long rates may be getting close to the bottom of the cycle.

Last week's rally was pushed along by good inflation figures and weak retail sales statistics for September. The producer price index, unveiled on Thursday, rose 0.2 per cent during the month, while the consumer price index was unchanged.

The consumer data, released on Friday, set off a flood of buying orders which pushed the yield on the benchmark 30-year bond down to 5.78 by the close, compared with 5.85 per cent on Thursday and 5.93 per cent at the end of the previous week. The 10-year Treasury note ended the week at 5.16 per cent, its lowest since 1967.

For now, the main forces working on the market seem to be benign. Inflation is subdued, with consumer prices rising at an annual rate of 2.5 per cent so far this year. Economic growth remains sluggish, with third-quarter GDP figures, due on October 8, expected to show a rise of around 3 per cent, with some further acceleration possible in the fourth quarter.

The dollar appears to be on a gently firming trend and the political backdrop seems favourable. Mr Mitchell Held, of Smith Barney Shearson, says market psychology should be helped over the next few months by further budget deficit cutting initiatives, including the Senate's consideration of a balanced-budget amendment to the constitution.

There is no apparent need for the Federal Reserve to change its policy stance – a perception which has stalled short-term interest rates while the long end has come sharply down, producing a much flatter yield curve, albeit one still on the steep side compared to past trends. The spread between the two-year note and the 30-year bond stands at around 200 basis points.

The result is a broad consensus that the yield on the long bond has further to fall – possibly to around 5.5 per cent – and that the market may then oscillate for a considerable time within a band of between 5.5 per cent and 6 per cent before the interest rate cycle turns upwards.

However, this picture could be upset by unpleasant inflation surprises. Analysts are already warning, for example, that October's figures are likely to be bad, in part because of the introduction of a new tax on gasoline.

While mutual fund money pours into the market, other leading fund managers seem to be slowly trimming their portfolios, in the belief that it is better to narrowly miss the bottom than suffer when rates rise once more.

Some analysts argue that a more sluggish performance over the past few weeks in interest-rate sensitive equity sectors – such as utilities and banking stocks – could be a sign of a bond bull market which is losing momentum.

Martin Dickson

ECU BONDS

Yields fall on German court ruling

LAST Tuesday's ruling on the Maastricht treaty by Germany's constitutional court breathed new life into the Ecu market, causing it to outperform all significant European bond markets last week.

Although it attached some conditions to the ruling, the court judged the Maastricht treaty for European monetary union to be consistent with Germany's basic law.

While the verdict "does not accelerate the progress to monetary union, it does remove an important factor which could have derailed it," said Mr Adrian James, a bond analyst with NatWest Markets.

After the ruling, the yield on the benchmark 8 per cent Ecu OAT due 2003 fell some 25 basis points to 6.40 per cent on Friday. The Ecu bond's yield gap over the 6.5 per cent 10-year German bund narrowed to 49 from 69 basis points.

However, in spite of their sharp rises, Ecu bonds are expected to post further gains as investors return to the market after a protracted absence.

"With the last legal hurdle out of the way, we've seen keen demand from international investors," said Mr Hans Knol ten Bensel, Ecu analyst with Kredietbank NV.

Borrowers, too, are expected to flock back to the Ecu sector, adding depth to a market which was becoming increasingly illiquid amid the uncertainty following the Danish rejection of the Maastricht treaty in a referendum in June 1992.

Following the German court ruling, the European Community was the first to tap pent-up demand for Ecu bonds last week with its Ecu1bn of 6 per cent 7-year Eurobonds.

According to Mr Knol ten Bensel, "there is great demand for current-coupon issues," as many older bonds with higher coupons trade at a large premium to their par value, which deters many investors.

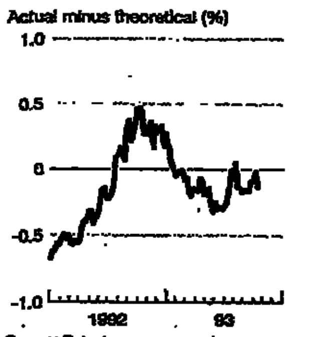
The coming months will see more supply, the bulk of which is likely to be issued by EC bodies and sovereigns.

Among the sovereigns, France and the UK have been regular Ecu borrowers, but Belgium is also said to be considering a programme of Ecu-denominated OLOs, or linear Treasury bonds.

The next Ecu issue will be the UK Treasury's Ecu500bn 8 per cent notes due 1996, to be auctioned tomorrow. The notes are expected to meet with a warm welcome at a time when many investors are shifting back into shorter maturities in anticipation of near-term European rate cuts.

Ecu bond yield spread

Actual minus theoretical (%)



Source: Datastream

"The issue is almost perfectly timed," said Mr Bob Tyley, head of bond analysis at Paribas Capital Markets.

"The best value is towards the shorter end," says Mr Steven Major, senior bond analyst at Crédit Lyonnais. As he sees it, Europe's bond markets have now reached a turning point, and yield curves are set to steepen as central-bank easing resumes.

Investors are also expected to take comfort from the freezing of the Ecu when the Maastricht treaty takes effect on November 1.

In the past, the basket has undergone regular five-yearly revisions, and the freezing of the Ecu's composition will remove another source of uncertainty for investors, according to analysts.

Meanwhile, Ecu bonds offer an interesing opportunity for French franc investors, Mr Major points out. Switching into Ecu out of francs substantially reduces currency risk, while the bonds offer a yield pick-up of some 50 basis points over 10-year OATs, he says.

Another indicator of Ecu bonds' value is the relationship between actual and their theoretical yields (calculated according to the bond yields of the Ecu's component currencies). On Friday, the actual yield was some 14 basis points below the theoretical yield, indicating that the bonds are expensive relative to their theoretical value.

However, many expect that spread to widen further; Mr Tyley at Paribas says the actual yield could move as much as 20–25 basis points below its theoretical counterpart.

Conner Middelmann

UK GILTS

Inflationary pressure shrugged off

THE GILT market took a relaxed view of last week's higher than expected figures for inflation, with long-dated bonds barely moving and prices of short-dated securities edging higher.

The overall effect of a spate of data about the UK economy was to flatten the yield curve slightly, as investors reasoned that signs of a faltering in the recovery were more likely to push Mr Kenneth Clarke, the chancellor, for an early cut in interest rates.

Perceptions that inflationary pressures in the UK remain weak, in spite of a relatively big move upwards in the retail prices index and also in prices for factory goods at the wholesale level, were behind the modest increase in yields for gilts with maturities of more than 10 years.

On Friday night the yield for the 8.75 per cent bond payable in 2017 was quoted at 7.18 per cent, compared with 7.17 per cent the week before.

At the other end of the yield curve, the 10 per cent gilt dated 1996 had a yield on Friday night of 5.9 per cent, comfortably down on the 6.06 per cent quoted the week before.

The move fits in with the feeling that, on the back of evidence of a sluggish economy, Mr Clarke may reduce base rates from the current 6 per cent around the time of the Budget on November 30, possibly to offset the effects of a fiscal tightening.

However, the changes in the yield curve have to be put in the context of moves in other European bond markets.

With investor interest in French and German bonds fairly strong, 10-year gilts fell back last week in relation to equivalent German bonds.

At the end of the week, yields on the UK instruments were around 106 basis points higher than those on corresponding German securities, after a yield difference of just 96 basis points seven days earlier.

The fall last week in short-term yields fits in with the feeling that the chancellor may cut base rates from the current 6 per cent around the time of the Budget, possibly to offset the effects of a fiscal tightening

This took the yield spread back to the levels seen in July, after which the difference had come down as a result of the relatively good performance of UK bonds during the summer.

With the future direction of gilt prices somewhat uncertain, a firmer clue as to likely levels of demand for the bonds may come today when the Treasury announces how much the government had to borrow last month to make up the shortfall between spending and revenues.

City analysts reckon this will come out at around £5.3bn, a number large enough to reinforce worries about the large volume of gilts to be issued over the next few years.

A figure of this magnitude could easily lead to a sell-off in gilts, a day ahead of the announcement tomorrow about the volume of bonds the Bank of England is due to auction on October 27.

UK gilts yield

It appears likely that the Bank will decide to auction about £3.25bn of these bonds, in the maturity range 1997 to 2001.

Last week was marked by heavy two-way gilt trading as investors wrestled with the contradictory messages from the UK economic data.

On one hand, the move up last month in the Treasury's preferred measure of underlying retail inflation – the year-on-year increase in the RPI excluding mortgage interest payments – gave the impression that price pressures were increasing.

The change in this measure from 3.1 per cent in August to 3.3 per cent last month, while the year-on-year change in the RPI itself went up from 1.7 per cent to 1.8 per cent, came after news that prices of finished manufactured goods – excluding the volatile elements of food, drink, tobacco and petrol – rose by 3 per cent in the year to September after advancing by 2.7 per cent in the year to August.

However, giving a different view to gilt investors were further Central Statistical Office figures showing that growth in industrial production faltered during the summer, with manufacturing output down 0.7 per cent in the three months to August 31 compared with the previous three-month period.

Some gilt analysts paid more attention to this element of the week's data – which backed up recent anecdotal evidence of subdued business activity throughout the economy – especially in view of the perception that the RPI figures seem to have been distorted by unusually high prices of second-hand cars.

Peter Marsh

FT/ISMA INTERNATIONAL BOND SERVICE

U.S. DOLLAR STRAIGHTS	Issued	Bid price	Chg on week	Yield
Abb Intl Fin 6⅛ 96	200	104⅞		4.38
Abbey Natl Treasury 6½ 03	1000	104½	+⅛	5.87
African Dev Bk 7⅜ 23	500	110¼	+1⅛	6.57
AlbertaProvince 8⅝ 96	750	111⅞	+⅛	4.82
AlbertaProvince 9⅜ 95	600	109¾	-⅛	4.28
American Express 0 00	450	65¼	+⅛	6.15
American General 9¾ 95	100	108⅝		4.37
American Intl 0 04	750	51⅞	+⅛	6.25
Amoco Canada 7¼ 02	250	110⅝	+⅛	5.68
Asfinag 7⅞ 02	200	110⅝	+⅛	5.72
Asian Dev Bank 0 04	1000	52¼	+⅛	6.15
Asian Dev Bank 8 96	100	108⅝	+⅛	4.64
Australia 11 95	200	110⅞		4.20
Austria 7¾ 97	200	109½	+⅛	4.61
Austria 8½ 00	400	117⅝	+⅛	5.18
Austria 9¼ 96	100	111⅞		4.47
Bank of Tokyo 8⅛ 96	100	108		4.83
Banque Paribas 7½ 96	100	106	+⅛	4.70
Barclays Jersey 10⅛ 96	250	111⅞		4.74
BASF Fin Europe 7 99	200	108⅝	+⅛	5.34
BAT Capital 6 98	400	103¼	+¼	5.16
Bayer USA 8¼ 96	150	108⅞		4.85
Belgium 8 97	300	110⅛		4.63
Belgium 8¼ 96	400	115½	+¼	4.91
Belgium 9.20 10	500	130⅝	+1⅛	6.20
Belgium 9⅝ 96	250	110⅛	+¼	4.98
Bellsouth Telecom 5¼ 98	300	102	+⅛	4.75
BFCE 7¾ 97	150	109⅝	+⅛	4.60
BFCE 9¼ 95	150	110⅛		4.12
BMW Leasing 7⅞ 96	200	107⅞	+⅛	4.84
Boots 9 97	175	111⅝	+⅛	4.98
BP America 8¼ 99	250	119½	+¼	5.48
BPCA Finance 8⅛ 98	150	112⅝	+⅛	5.21
British Columbia 7¼ 02	500	113¼	+½	5.78
British Gas 0 21	1500	14½	+⅛	7.13
British Telecom Fin 8¾ 99	200	118⅝	-⅛	5.35
British Telecom Fin 9⅞ 96	250	118¼	-⅛	5.20
Caisse Francaise 6¼ 05	330	104⅛	+½	5.74
Caisse Natl Energie 11¼ 95	125	108⅝	-⅛	3.86
Canada 9 96	1000	110½		4.22
Canada 10 95	500	111⅞		4.16
Canadian Pacific 7½ 96	100	106⅝		5.00
Cariplo 8¼ 96	200	113¼	+⅛	5.47
CCCE 8¼ 99	200	118	+⅛	5.16
[illegible]				

U.S. DOLLAR STRAIGHTS (cont.)	Issued	Bid price	Chg on week	Yield
Sears Euro Trust 8¼ 96	750	109⅛	-¼	4.77
Sears o/s Fin Zero 0 98	500	76⅝	+⅛	6.78
Sears Roebuck Euro 9¼ 95	500	107⅜	-⅛	4.27
Skandinaviska Ensk 7⅞ 97	500	106⅞	-⅛	5.24
SNCF 9½ 98	150	118⅝	+⅛	5.00
Spain 6½ 99	1500	106⅝	+⅛	5.15
State Bk NSW 8½ 96	200	109⅜	-⅛	4.72
Sweden 5½ 95	2000	102⅝		4.18
Sweden 6½ 03	2000	105¾	+½	5.78
Sweden 8¼ 98	350	116⅛	+⅛	4.91
Swedish Export 8⅞ 98	700	103		4.46
Thyssen Finance 7½ 98	200	107⅜	+½	5.85
Tohoku Elec Power 7¼ 97	250	[illegible]		
Tokai Asia 11½ 95	100	[illegible]		
Tokyo Elec Power 6⅛ 03	1000	[illegible]		
Tokyo Elec Power 8¾ 96	300	[illegible]		
Tokyo Gas 5½ 98	350	[illegible]		
Tokyo Metropolis 8¼ 96	200	[illegible]		
Toyota Motor 5⅝ 98	1500	[illegible]		
Toyota Motor 8⅝ 97	1000	[illegible]		
UBS Fin 9⅛ 02	225	[illegible]		
Unilever Cap Corp 9¼ 00	400	[illegible]		
United Kingdom 7¼ 02	3000	[illegible]		
Uruguay 8¼ 95	100	[illegible]		
Venezuela 9¼ 96	150	[illegible]		
Victorian Pub Auth 8½ 98	100	[illegible]		
Warner-Lambert 8⅛ 96	100	[illegible]		
World Bank 8⅛ 01	1500	[illegible]		
World Bank 8⅜ 99	1500	[illegible]		
World Bank 8¼ 97	1500	[illegible]		
Xerox Corpn 8⅞ 96	100	[illegible]		
Yokohama 8 01	200	[illegible]		

FLOATING RATE NOTES	Issued	Bid	Offer	C.cpn
Alaska Housing 0.10 01	125	[illegible]		
Alliance Leics 0.10 95 £	150	[illegible]		
American Express Bk ⅛ 99	200	[illegible]		
Anglia ⅛ 98 £	100	[illegible]		
ANZ Banking Perp 0.15	300	[illegible]		
Austria -0.15 05 DM	700	[illegible]		
Banco Roma 0 99	200	[illegible]		
Bank New York ⅛ 97	200	[illegible]		
Bank of Greece ⅛ 99	250	[illegible]		
Bank of Montreal 0.05 98	250	[illegible]		
[illegible]				

SWISS FRANC STRAIGHTS	Issued	Bid price	Chg on week	Yield
Asian Dev Bank 6 10	100	115	+¼	4.70
Council Europe 4¼ 98	250	102½		4.10
EIB 6¼ 04	300	114¼	+¼	5.03
Elec de France 7¼ 06	100	118¾	+¼	5.25
Finland 7¼ 99	300	113¾	+¼	4.57
General Motors 7½ 95	100	103⅝		5.15
Hyundai Motor Fin 8½ 97	100	108½		5.98
Iceland 7⅞ 00	100	115¾	+¼	4.92
Kobe 6¼ 01	240	111½	+¼	4.68
New Zealand 4⅞ 99	200	101		4.65
Ontario 6¼ 03	400	108⅝	+⅛	4.93
Quebec Hydro 5 08	100	99⅝	+⅛	5.02
[illegible]				

[illegible]

STRAIGHT BONDS: Yield to redemption of the bid-price. Amount issued is expressed in millions of currency units.
FLOATING RATE NOTES: Denominated in dollars unless indicated. Margin above six-month offered rate for US dollars. C.cpn=Current coupon.
CONVERTIBLE BONDS: Denominated in dollars unless indicated. Prem=percentage premium of the current effective price of buying shares via the bond over the most recent price of the shares.
WARRANTS: Equity warrant prem=premium price over current share price. Bond warrant ex yld=yield at current warrant price.

Closing prices on October 15

INTERNATIONAL CAPITAL MARKETS

INTERNATIONAL BONDS

EC issue underlines its commitment to the Ecu

THE EUROPEAN Community tapped the Eurobond markets in inimitable style last week, as it made the most of the favourable sentiment sparked by the removal of the last legal obstacle to the ratification of the Maastricht treaty on European union.

The proceeds of its two offerings, one in Ecu and the other in D-Marks, will fund a large part of the second Ecu2bn tranche of the EC's Ecu8bn balance of payments loan to Italy. The EC will launch a third issue in the coming weeks to complete this tranche.

The market had been waiting for several weeks for the EC's issues to emerge, but the EC held fire until last Wednesday, the day after the German federal constitutional court made its ruling in favour of the treaty.

The EC chose to make the first offering of bonds in Ecu to underline the importance of the German court's decision. The treaty, which covers the second phase of European economic and monetary union, can now become European law from November 1.

In addition, the Ecu1bn offering of seven-year Eurobonds underlined the EC's commitment to the future of the Ecu bond market. This sector had been one of the main casualties of the long period of uncertainty about the future of the treaty.

Institutional investors deserted the Ecu bond market after Denmark rejected the treaty in a referendum in June 1992. The EC has been keen to attract them back since their presence is needed to allow the Ecu market to develop fully.

As a result, the EC decided to give up a few basis points when the bonds were priced in order to re-open the market to institutions. Nevertheless, the EC still achieved aggressive pricing for its bonds which, at the launch, yielded 12 basis points less than the French government's 9¼ per cent Ecu-denominated OAT due 2000.

By the end of the week, the yield spread had tightened to 14 basis points below the OAT and the bonds had risen to 99.25 bid from a fixed re-offer price of 98.97, which traders said indicated the strong demand for liquid Ecu bonds.

The EC intends to continue to show its leadership in the Ecu bond market by issuing its Eurobond offerings in Ecu wherever possible. However, since it is effectively raising the funds on behalf of a third party, in this case Italy, it is reluctant to dictate the terms.

The immediate performance of the EC's DM1bn offering of five-year Eurobonds has also been strong. At the launch on Thursday the bonds had a fixed re-offer price of 100.025 to yield eight basis points over the series 107 of German government medium-term notes. On Friday, the bonds were trading at 100.15 bid and the yield spread had tightened to six basis points.

The EC's ability to command aggressive pricing in the Eurobond market works in the favour of the ultimate borrower of the funds, because the EC does not make a profit on its lending, apart from covering the costs of issuing the bonds. As a result, Italy paid a competitive all-in cost of 6.2 per cent for its funds.

However, since the EC can only borrow in the Eurobond market to raise money for specific purposes – it must not plug any shortfall in its budget, as this has to come from savings or contributions from member states – it is relatively unusual for its Eurobond transactions to be this large.

This was another reason why last week's issues sold so quickly, since investors would probably have to wait at least six months before the EC launched another series of large Eurobond offerings to finance the third tranche for Italy.

However, it is possible that the EC might have to raise larger amounts in the Eurobond market in the future in order to fund the EC's commitment to creating new jobs within the Community.

In addition, it has not yet been decided if the EC's Ecu500m aid package to the West Bank and Gaza Strip will be in the form of a grant or a loan.

For now, at least, the EC's narrowly-defined borrowing remit and its inability to warehouse money mean that it is unlikely to be as active in the Eurobond market as the European Investment Bank, the EC's long-term financing institution. The EIB's annual borrowing programme of almost $19bn makes it one of the biggest issuers in the Eurobond market.

These constraints also bar the EC from taking advantage of the benefits offered by the global bond offering, a concept pioneered by the World Bank to enable borrowers to achieve a single world price and global distribution for their bonds.

The World Bank, which has already issued global bond offerings in dollars and yen, is expected to launch its first D-Mark global bond offering, of DM3bn, early this week.

The solution devised by the World Bank to bridge the legal differences between the US and Germany has opened up this type of financing to the EC, since the D-Mark would be the most likely currency for any global offering in the future.

EC officials believe that the trend to a global market is irreversible and that it is only be a matter of time before the EC jumps on the global bond bandwagon.

Antonia Sharpe

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Maturity	Coupon %	Price	Yield %	Launch spread bp	Book runner
US DOLLARS							
Kingdom of Belgium	500	Nov.2003	5.50	99.094R	5.621	+32 (5¾%-03)	Merrill Lynch Intl.
Kingdom of Denmark	120	Dec.1994	3.40	100.10R	-	-	Fuji Intl. Finance
Thai Central Chemical(d)§	60	Oct.2003	3.75	100	-	-	Jardine Fleming
ING Bank(h)‡	200	Oct.2005	(h)	100R	-	-	Merrill Lynch Intl.
LKB Baden Württemberg Fin.‡	1bn	Nov.1998	(k)	99.95R	-	-	CS First Boston
People's Republic of China	300	Nov.2003	6.125	99.15R	6.242	+88 (5¾%-03)	Lehman Brothers Asia
Banco Mexicano	100	Nov.1998	8.00#	100R	8.000	+340 (4¾%-98)	Chemical Inv'ment Bank
Rep. of Trinidad & Tobago(p)	125	Nov.2000	9.75#	99.79R	9.792	+495 (5¾%-98)	CS First Boston
SCICI(e,q)§	100	Apr.2004	(3½-4)	100	-	-	Barclays de Zoete Wedd
D-MARKS							
Fokker(b)	500	Nov.1998	6.25	101.75	5.838	-	Commerzbank
GZB Bank Stuttgart(c)	150	Nov.2003	6.125	102	-	-	Trinkaus & Burkhardt
European Economic Comm.	1bn	Nov.1998	5.625	100.025R	5.619	+8 (6¾%-98)	Deutsche Bank
Bayernhypo Finance	500	Nov.2000	5.875	101.50	5.610	-	Bayerische Hypobank
Deutsche Finance Netherlands(r)	750	Nov.2003	6.00	101.75	5.765	-	Deutsche Bank
Commerzbank O'seas Finance	500	Oct.2000	5.875	101.50	5.610	-	Commerzbank
STERLING							
Fisons	100	Nov.2003	8	98.735	8.190	+120 (8%-03)	JP Morgan Securities
DePfa Finance	500	Nov.2003	7.125	99.722R	7.165	+25 (8%-03)	Salomon Brothers/ UBS
Republic of Turkey	125	Oct.2003	9.00	97.77R	9.353	+230 (8%-03)	SG Warburg Securities
HMC Mortgage Notes 10‡	100	Nov.2020	(l)	99.92R	-	-	CS First Boston
North American Capital Corp.	100	Nov.2003	8.25	98.704R	8.447	+145 (8%-03)	Barclays de Zoete Wedd
BNL, London Branch(r)	100	Nov.1998	7.125	99.49R	7.250	+90 (7¼%-98)	IBJ International
YEN							
ABB International Finance	10bn	Jun.1999	(j)#	100.25R	-	-	Sakura Fin. Intl./ UBS
Seiyu(n)	20bn	Oct.2000	4.20	99.925R	-	-	Nomura International
Seiyu(e)	10bn	Feb.1999	3.80	100R	-	-	DKB International
Korea Development Bank(n)	9bn	Apr.1996	3.00	100.25R	-	-	IBJ International
Sumitomo Realty & Dev'ment(n)	30bn	Oct.1998	3.70	100.35R	-	-	Daiwa Europe
Sumitomo Realty & Dev'ment(e)	20bn	Feb.2000	3.90	100.25R	-	-	Yamaichi Intl. (Europe)
FRENCH FRANCS							
City of Paris	1.2bn	Nov.2000	5.75	99.05R	5.920	+19 (8½%-00)	Société Générale
National Bank of Hungary	1bn	Nov.1999	8.00	100R	8.000	+235 (8½%-98)	Crédit Lyonnais
SNCF(m)	1.6bn	Nov.2006	6.00	97.18R	6.325	+15 (c)	CDC
CANADIAN DOLLARS							
GMAC(e)	100	May.1999	7.00	99.135R	7.208	+97 (6½%-98)	RBC Dominion Securities
Banca Commerciale Italiana(f)‡	100	Nov.2003	(f)	100R	-	-	Kidder Peabody Intl.
San Paolo (Nassau Branch)‡	150	Nov.2003	(o)	100R	-	-	Kidder Peabody Intl.
Eurofima	110	Nov.2003	7.00	99R	7.143	+26 (7½%-03)	Swiss Bank Corp.
ITALIAN LIRE							
WestLB Europe	150bn	Oct.1998	8.00	101.825	7.548	-	San Paolo, Turin
Finance for Danish Industry	150bn	Nov.2000	8.00	101.425	7.729	-	JP Morgan
Abbey Natl. Treasury Services	200bn	Nov.1998	8.00	101.965	7.514	-	Banca Euromobiliare/ BCI
GUILDERS							
Asfinag	350	Nov.2003	6.125	100.10R	6.111	+21.6(6½%-03)	ABN Amro Bank
Rabobank Nederland	500	Jan.2009	6.375	99.95R	6.380	+19 (6¼Sep07)	Rabobank Nederland
ECUS							
European Economic Comm.	1bn	Nov.2000	6.00	98.97R	6.186	-12 (9½%-00)	BNP/ CS First Boston/ Dresdner/Goldman Sachs
AUSTRALIAN DOLLARS							
State Bank of New Sth. Wales	125	Nov.2000	6.50	100.625	6.386	-	Deutsche Bank London
HONG KONG DOLLARS							
Rabobank Nederland	400	Nov.2002	6.75#	99.77R	6.785	-	JP Morgan Secs. Asia
SWISS FRANCS							
Riken Vinyl Industry Co.(a)*φ	100	Oct.1997	0.375	100	-	-	Yamaichi Bank (Switz.)
National Bank of Hungary	200	Dec.1999	6.75	102	6.339	-	UBS
Oberoest. Kraftwerke(g)	200	Dec.2003	4.25	102.125	3.988	-	Credit Suisse
Oeresundssoerbindelsen	100	Dec.2003	4.375	102.50	4.066	-	Credit Suisse
City of Vienna(i)*	100	Nov.1997	4.25	102.05	3.689	-	Swiss Bank Corp.
Showa High Polymer Co.(s)*φ	100	Nov.1997	0.4375	100	-	-	Citibank (Switz.)

Final terms and non-callable unless stated. The yield spread (over relevant government bond) at launch is supplied by the lead manager. *Private placement. §Convertible. φWith equity warrants. ‡Floating rate note. #Semi-annual coupon. R: fixed re-offer price. a) Denom.: SFr50,000 + 50 warrants. Exercise price: Y1,056. FX: 78.51Y/SFr. b) Puttable from 18/5/96 if Deutsche Aerospace reduces shareholding to <50%. c) Convertible into a 6¾% bond with the same maturity. Conversion price will be the average price of the 6½% bund due 2003 on 9, 10 & 11/10/96. Conversion period: 16/10/96 - 5/11/98. d) Conversion price: baht 61.65. FX: 25.28 baht/$. Puttable on 25/10/98 at 115½%. Callable after 3 years subject to 140% rule. e) Short 1st coupon. f) Borrowed through Comit Finance (Jersey). Coupon pays 6-month BA's - 0.3%; minimum 6¾%, maximum 9%. g) 51% share maintenance clause. h) Issue launched 16/9/93 was increased to $300m. Coupon pays 6-month Libor - 0.25%; minimum 5%, maximum 8%. i) Coupon pays 2.69% from 8/11/93 - 8/2/94 and 3.65% semi-annually thereafter. j) Issue launched 8/10/93 was increased to SFr250m. k) Coupon pays 6-month Libor - 0.125%. l) Coupon pays 3-month Libor + 0.275%. Callable from 17/11/98 at par. m) International tranche of FFr3.2bn domestic issue which may be increased to FFr4bn. Spread is over interpolated OAT's. n) Short 1st and 2nd coupons. o) Coupon pays 6-month BA's - 0.3%; minimum 6¾%, maximum 9%. p) Puttable on 3/11/98 at 97.19%. q) Fixing: early this week. Indicated conversion premium 7-12%. Puttable on 1/4/99 to yield 100bp over Treasuries. Callable from 1/4/98, subject to 140% rule, at par. r) Issue price relates to DM500m. Increase of DM250m had an issue price of 101.90%. s) Fixing: 21/9/93. Callable on 9/11/96 at 102% declining by ½% semi-annually. Note: Yields are calculated on ISMA basis.

RISK AND REWARD

Corporate debt sector goes retrospective

THE corporate debt market went retrospective last week, producing a spate of exotic long-dated bonds the likes of which have not been in fashion since the 1950s. Boeing, the US aerospace group, launched a $125m, non-callable, 50-year issue: and ABN Amro, the Dutch bank, sold $150m of 100-year bonds.

The bank issue was priced to yield 110 basis points over the benchmark 7.125 per cent 30-year US Treasury bond. A Yankee bond denominated in US dollars, it was snapped up by yield-hungry US money managers.

There have been two other "century" bond issues this year, by Walt Disney and Coca-Cola. It is not nostalgia that is bringing these bonds back, but a return to a tranquil, low inflation environment.

This has boosted real rates of return and made the leverage provided by ultra long-term securities attractive to investors who believe interest rates still have room to slide.

The risk, of course, is that the leverage these issues offer cuts both ways – and when rates rise, the price of the long-dated bonds will fall far more precipitously than shorter maturities.

From the point of view of corporate borrowers with high credit quality, interest rates have fallen far enough to make a long-term lock seem prudent.

The market for the ABN Amro bond and the 50-year Boeing issue was underpinned by news last week that the so-called "core" rate of US wholesale price inflation was flat in September, and that the closely-watched consumer price index was up only 2.7 per cent on a year-on-year basis.

Traders who had bought the Boeing and ABN Amro issues on Monday and Tuesday were already sitting on a profit by the end of the week, while the portfolio jockeys who had opted for a ride on the Disney century bond in July had logged an impressive gain of 900 basis points.

The debate over ultra long-term debt is by no means one-sided. Some economists argue that the value added from buying a bond with a 100-year maturity is only marginal when compared with returns from more conventional 30-year corporate debt.

"There's a school of thought which says it's like using a sledgehammer to hang a picture," says Mr Michael Bassett, an investment consultant with Stone & McCarthy.

According to Mr Bassett's calculations, the extra 70 years of maturity in a century bond will deliver only one more year of duration to the average portfolio than a conventional 30-year issue.

What the century bonds do deliver is "convexity", or price appreciation in response to a drop in interest rates.

Be that as it may, extra-long dated bonds have proved popular with investors who, having missed the initial stages of the bond rally, are now playing catch-up.

These investors have bought the extra-long dated bonds to get a quick boost for their portfolios, and have no intention of holding them to maturity.

Other interested buyers have been insurance companies, which like a long, steady stream of coupon payments to match long-term liabilities, such as life insurance claims.

Century bonds are predictable, and avoid the reinvestment costs and risks posed by shorter maturities.

Ultra-long bonds are essentially annuities, with buyers more interested in their coupon stream than in recovering principal.

For extremely long-dated corporate issues to be successful, an issuer must be perceived as a very high-quality borrower, says Mr Fred Sturm, an economist with Fuji Securities.

With the yield on 30-year US Treasury bonds rapidly approaching 5¾ per cent, more long-dated corporate bonds are likely to appear on the market.

Their rarity and relative illiquidity will require special analysis, possibly more akin to individual equity valuation than traditional corporate bond rating.

Laurie Morse

Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

1/2 hour period ending	Pool purchase price £/MWh	Pool purchase price £/MWh	Pool selling price £/MWh
0030	18.01	21.01	24.29
0100	18.01	20.66	23.94
[illegible]	[illegible]	[illegible]	[illegible]

Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

1/2 hour period ending	Pool purchase price £/MWh	Pool purchase price £/MWh	Pool selling price £/MWh
0030	17.99	18.00	18.00
0100	17.99	18.00	18.00
[illegible]	[illegible]	[illegible]	[illegible]

WORLD STOCK MARKETS

CANADA

TORONTO

4 pm close October 15

Quotations in cents unless marked $

MONTREAL

4 pm close October 15

Total Sales 31,192,410 shares

INDICES

NEW YORK

DOW JONES	Oct 15	Oct 14	Oct 13	Oct 12	1993 HIGH	1993 LOW	Since compilation HIGH	Since compilation LOW
Industrials	3629.73	3621.63	3603.19	3593.13	3652.09 (25/8)	3241.95 (20/1)	3652.09 (25/8/93)	41.22 (2/7/32)
Home Bonds	109.71	109.37	109.29	109.33	109.71 (15/10)	103.49 (11/1)	109.71 (15/10/93)	54.99 (1/10/81)
Transport	1649.65	1638.04	1645.23	1637.11	1683.06 (16/4)	1463.84 (4/1)	1683.06 (16/4/93)	12.32 (8/7/32)
Utilities	246.05	243.54	240.51	241.76	256.46 (31/8)	217.14 (8/1)	256.46 (31/8/93)	10.50 (8/4/32)

DJ Ind. Day's High 3664.66 (3652.08) Low 3598.20 (3574.40) (Theoretical♠)
Day's High 3642.31 (3628.94) Low 3619.38 (3598.44) (Actual♠)

STANDARD AND POOR'S

	Oct 15	Oct 14	Oct 13	Oct 12	1993 HIGH	1993 LOW	Since compilation HIGH	Since compilation LOW
Composite ‡	469.50	466.83	461.49	461.12	469.50 (15/10)	429.05 (8/1)	469.50 (15/10/93)	4.40 (1/6/32)
Industrials¶	533.61	528.99	522.43	521.82	533.61 (15/10)	496.48 (26/4)	533.61 (15/10/93)	3.62 (21/6/32)
Financial	47.48	48.01	48.35	48.28	48.40 (28/9)	39.89 (8/1)	48.40 (28/9/93)	8.64 (1/10/74)
NYSE Composite	260.48	259.12	255.75	256.67	260.48 (15/10)	236.21 (8/1)	260.48 (15/10/93)	4.46 (25/4/42)
Amex Mkt. Value	483.23	481.65	475.85	470.50	483.23 (15/10)	395.84 (8/1)	483.23 (15/10/93)	29.31 (9/12/72)
NASDAQ Composite	782.42	785.41	778.97	772.46	785.41 (14/10)	645.87 (26/4)	785.41 (14/10/93)	54.87 (31/10/72)

	Oct 8	Oct 1	Sep 24	year ago (approx.)
Dow Industrial Div. Yield	2.84	2.85	2.88	3.31

	Oct 13	Oct 6	Sep 29	year ago (approx.)
S & P Industrial div. yield	2.47	2.48	2.49	2.76
S & P Indl. P/E ratio	28.00	27.86	27.76	26.77

NEW YORK ACTIVE STOCKS

Friday	Stocks traded	Closing price	Change on day
Navistar	8,675,200	23	+ 1⅛
RJR Nabisco	5,988,000	5	- ⅛
Philip Morris	5,623,000	52⅞	+ ½
Texas Inst	4,443,600	65¾	+ 2⅞
Wal-Mart	4,336,900	26⅞	+ ⅝
Oasis Hotl	3,266,000	25¼	--
IBM	3,221,400	44½	+ 1⅞
Walt-Disney	3,245,200	43¾	- ⅛
Chrysler	2,990,800	62⅞	+ 1⅛
Amer T & T	2,978,200	60⅛	- ⅜

TRADING ACTIVITY

† Volume (Millions)	Oct 15	Oct 14	Oct 13
New York SE	358.806	351.695	290.687
Amex	42.468	24.821	20.375
NASDAQ	(u)	382.755	415.364
NYSE			
Issues Traded	2,617	2,635	2,612
Rises	1,202	1,173	945
Falls	802	906	993
Unchanged	613	556	674
New Highs	187	152	143
New Lows	14	23	34

CANADA

TORONTO	Oct 15	Oct 14	Oct 13	Oct 12	1993 HIGH	1993 LOW
Metals & Minerals	3005.18	2967.95	2941.15	2959.37	3140.94 (16/8)	2743.31 (21/1)
Composite	4182.60	4145.00	4111.80	4107.31	4182.60 (15/10)	3275.80 (21/1)
MONTREAL Portfolio	1983.18	1961.96	1936.78	1937.37	1983.18 (15/10)	1720.97 (21/1)

Base values of all Indices are 100 except NYSE All Common - 50; Standard and Poor's - 10; and Toronto Composite and Metals - 1000. Toronto Indices based 1975 and Montreal Portfolio 4/1/83. † Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. (c) Closed. (u) Unavailable. ♠ The DJ Indl. index theoretical day's highs and lows are the averages of the highest and lowest prices reached during the day by each stock; whereas the actual day's highs and lows (supplied by Telekurs) represent the highest and lowest values that the index has reached during the day. (The figures in brackets are previous day's). ¶ Subject to official recalculation.

	Oct 15	Oct 14	Oct 13	Oct 12	1993 HIGH	1993 LOW
AUSTRALIA						
All Ordinaries (1/1/80)	2074.1	2062.0	2038.6	2028.0	2074.10 (15/10)	1495.00 (13/1)
All Mining (1/1/80)	863.7	865.7	858.8	844.1	904.58 (2/8)	594.70 (13/1)
AUSTRIA						
Credit Aktien (30/12/84)	405.63	403.04	403.85	402.56	405.63 (15/10)	300.28 (14/1)
Traded Index (2/1/91)	1043.83	1033.84	1037.81	1034.53	1043.83 (15/10)	712.06 (15/1)
BELGIUM						
BEL20 (1/1/91)	1370.86	1362.71†	1348.45	1348.38	1370.86 (15/10)	1125.46 (4/1)
DENMARK						
Copenhagen SE (3/1/83)	336.78	334.12	335.29	335.05	340.58 (19/8)	261.90 (4/1)
FINLAND						
HEX General (28/12/90)	1500.5	1498.2	1491.8	1472.6	1500.50 (15/10)	843.10 (28/1)
FRANCE						
CAC General (31/12/81)	588.06	585.09	588.84	590.70	600.51 (31/8)	471.24 (13/1)
CAC 40 (31/12/87)	2139.28	2113.88	2127.28	2128.85	2216.49 (31/8)	1772.21 (29/1)
GERMANY						
FAZ Aktien (31/12/58)	774.08	768.59	772.75	769.05	774.55 (11/10)	598.92 (14/1)
Commerzbank (1/12/53)	2213.7	2191.5	2210.1	2198.8	2215.00 (11/10)	1694.38 (14/1)
DAX (30/12/87)	2015.03	1990.07	2001.51	1998.61	2015.03 (15/10)	1516.59 (13/1)
HONG KONG						
Hang Seng Bank (31/7/64)	8763.98	8412.40	8292.95	8253.45	8763.98 (15/10)	5437.80 (4/1)
IRELAND						
ISEQ Overall (4/1/88)	1735.84	1722.62	1729.17	1733.08	1754.84 (19/8)	1191.19 (11/1)
ITALY						
Banca Com. Ital. (1972)	577.59	568.64	568.03	579.94	632.86 (30/8)	446.33 (8/1)
MIB General (4/1/93)	1270.9	1251.0	1250.0	1276.0	1380.00 (30/8)	992.00 (11/1)
JAPAN						
Nikkei (16/5/49)	20174.42	20082.81	20038.40	20137.31	21148.11 (13/9)	16287.45 (25/1)
Tokyo SE (Topix) (4/1/68)	1654.01	1645.21	1645.53	1652.28	1698.67 (3/9)	1250.06 (25/1)
2nd Section (4/1/68)	2229.03	2216.84	2227.69	2244.84	2384.97 (7/9)	1651.72 (28/1)
MALAYSIA						
KLSE Composite (4/4/86)	927.46	918.03	911.38	905.71	927.46 (15/10)	614.28 (13/1)
NETHERLANDS						
CBS TtlRtn.Gen.(End 1983)	394.6	390.0	388.5	388.2	394.60 (15/10)	295.70 (4/1)
CBS All Shr (End 1983)	258.0	258.0	252.1	251.9	258.00 (15/10)	196.60 (13/1)
NORWAY						
Oslo SE (Ind) (2/1/83)	983.98	970.24	972.07	981.95	983.98 (15/10)	669.93 (27/1)
PHILIPPINES						
Manila Comp (2/1/85)	2175.25	2138.75	2112.03	2093.83	2175.25 (15/10)	1270.88 (4/1)
SINGAPORE						
SES All-Singapore (2/4/75)	553.18	542.54	537.99	536.39	553.18 (15/10)	394.16 (13/1)
SOUTH AFRICA						
JSE Gold (28/9/78)	1700.00¶	1780.0	1777.6	1685.0	2098.00 (30/7)	775.00 (5/1)
JSE Industrial (28/9/78)	4529.0¶	4528.0	4538.0	4528.0	4719.00 (9/7)	4333.00 (19/4)
SOUTH KOREA**						
Korea Comp Ex. (4/1/80)	734.37	737.77	740.39	723.57	777.25 (9/8)	606.93 (6/3)
SPAIN						
Madrid SE (30/12/85)	298.73	296.74	294.83	(c)	304.88 (30/8)	215.80 (4/1)
SWEDEN						
Affarsvarlden Gen. (1/2/37)	1381.8	1368.8	1371.8	1363.9	1381.80 (15/10)	879.10 (28/1)
SWITZERLAND						
Swiss Bank Ind. (31/12/58)	1117.76	1105.82	1100.05	1091.00	1117.76 (15/10)	904.80 (11/1)
SBC General (1/4/87)	888.79	882.18	878.15	872.72	888.79 (15/10)	678.70 (11/1)
TAIWAN**						
Weighted Price (30/6/66)	4025.27	4014.87†	3994.51	3942.25	5013.28 (7/4)	3088.43 (9/1)
THAILAND						
Bangkok SET (30/4/75)	1154.95	1137.59	1140.90	1101.96	1154.95 (15/10)	818.84 (1/8)
WORLD						
M.S. Capital Intl.(1/1/70) $	607.2*	602.6	603.4	604.4	607.20 (15/10)	488.60 (13/1)
Euro Top-100 (26/6/90)	1145.07	1131.01†	1123.53	1129.04	1145.07 (15/10)	862.72 (13/1)

**Saturday October 9: Taiwan Weighted Price: 3985.68, Korea Comp Ex: 712.35.
¶ Subject to official recalculation. † Correction. *Calculated at 15.00 GMT.

Base values of all indices are 100 except Austria Traded, BEL20, HEX Gen., MIB Gen., CAC40, Euro Top-100, ISEQ Overall and DAX - 1,000, JSE Gold - 255.7, JSE 20 Industrials - 264.3 and Australia All Ordinary and Mining - 500; (c) Closed. (u) Unavailable

TOKYO - Most Active Stocks

Friday, October 15, 1993

	Stocks Traded	Closing Prices	Change on day		Stocks Traded	Closing Prices	Change on day
Fujitsu Ltd	5.0m	851	-6	Hitachi	2.1m	825	-11
Nippon Steel	4.9m	327		Showa Sangyo	2.0m	657	+17
Kawasaki Steel	3.1m	340	+10	NKK Corp	1.9m	273	+1
Mitsubishi Heavy	2.7m	682		Nippon Comsys	1.9m	1,200	+10
Janome Sewing	2.7m	359	+24	Suzuki Motor	1.8m	970	+35

AUSTRIA · FRANCE · GERMANY (continued) · NETHERLANDS (continued) · SWITZERLAND (continued) · BELGIUM/LUXEMBOURG · DENMARK · FINLAND · GERMANY · ITALY · NORWAY · SPAIN · SWEDEN · SWITZERLAND · SOUTH AFRICA · JAPAN · AUSTRALIA (continued) · HONG KONG · MALAYSIA · SINGAPORE

هكذا من الأصل

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AUTHORISED UNIT TRUSTS

Guide to pricing of Authorised Unit Trusts

Compiled with the assistance of Lautro §§

INITIAL CHARGE: Charge made on sale of units. Used to defray marketing and administrative costs, including commission paid to intermediaries. This charge is included in the price of units.

OFFER PRICE: Also called issue price. The price at which units are bought by investors.

BID PRICE: Also called redemption price. The price at which units are sold back by investors.

CANCELLATION PRICE: The minimum redemption price. The maximum spread between the offer and bid prices is determined by a formula laid down by the government. In practice, most unit trust managers quote a much narrower spread. As a result, the bid price is often set above the cancellation price. However, the bid price might be moved to the cancellation price by the managers at any time, usually in circumstances in which there is a large excess of sellers of units over buyers.

TIME: The time shown alongside the fund manager's name is the time of the unit trust's valuation point unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows: (♥) - 0001 to 1100 hours; (♣) - 1101 to 1400 hours; (♦) - 1401 to 1700 hours; (♠) - 1701 to midnight. Daily dealing prices are set on the basis of the valuation point; a short period of time may elapse before prices become available.

HISTORIC PRICING: The letter H denotes that the managers will normally deal on the price set on the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers must deal at a forward price on request, and may move to forward pricing at any time.

FORWARD PRICING: The letter F denotes that the managers deal at the price to be set on the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper are the most recent provided by the managers.

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from fund managers.

Other explanatory notes are contained in the last column of the FT Managed Funds Service.

§§ Life Assurance and Unit Trust Regulatory Organisation, Centre Point, 103 New Oxford Street, London WC1A 1QH Tel: 071-379-0444.

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GUERNSEY (SIB RECOGNISED)

GUERNSEY (REGULATED)(**)

OFFSHORE INSURANCES

IRELAND (SIB RECOGNISED)

IRELAND (REGULATED)(**)

ISLE OF MAN (SIB RECOGNISED)

ISLE OF MAN (REGULATED)(**)

JERSEY (SIB RECOGNISED)

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John Govett (Channel Islands) Ltd (1000)F

Bank Von Ernst & Cie AG - Contd.

INVESCO International Limited - Contd.

Atlantas Sicav

Nikko Bank (Luxembourg) S.A.

CA Securities Investment Fund Mngt Ltd

Hasenbichler Asset Management GmbH

Pacific Growth Fund

JERSEY (REGULATED)(**)

LUXEMBOURG (SIB RECOGNISED)

LUXEMBOURG (REGULATED)(**)

SWITZERLAND (SIB RECOGNISED)

OTHER OFFSHORE FUNDS

MANAGED FUNDS NOTES

CURRENCIES, MONEY AND CAPITAL MARKETS

FOREIGN EXCHANGE AND MONEY MARKETS

ERM to dominate

DEBATE over how Belgium, and to a lesser extent France, will pull themselves out of their currency dilemmas is set to preoccupy the financial markets this week, *writes Peter John.*

The Belgian government is due to release details of its much vaunted social pact, the blueprint for wage indexation and employment which is aimed at reducing the country's crippling national debt.

UK clearing bank base lending rate 6 per cent from January 26, 1993

Currency dealers remain sceptical of its immediate benefits and are expected to concentrate on the cleft-stick argument: they say that while currency support by the Belgian National Bank has failed to maintain the Belgian franc's strength against the D-Mark the ultimate weapon of higher interest rates might only depress the economy further.

Belgium already has an official interest rate of 9.65 per cent and short term lending rates at around 10 per cent while the country's inflation is only 2.8 per cent.

Mr George Magnus, economist at S.G. Warburg, said: "I can't see how Belgium can get out of this one alive without lower interest rates and a weaker currency."

Many believe that Belgium and France will have to follow the path taken by Spain over the past year. Spain devalued its currency to help its economy and has subsequently been able to lower interest rates to the benefit rather than the detriment of the currency. Last week it cut its key rate by half a percentage point and the peseta strengthened.

Many investors have been looking at the fundamental benefits to the Belgian economy of cutting rates and abandoning its strong franc policy. US money has been pouring in to the Belgian stock and bond markets pushing the former to record highs.

Elsewhere investors are looking towards German M3 growth figures this week.

£ IN NEW YORK

Oct 15	Close	Previous Close
£ Spot	1.5100-1.5110	1.5140 1.5150
1 month	0.38-0.35pm	0.36 0.35pm
3 months	0.92-0.90pm	0.92 0.91pm
12 months	2.90-2.83pm	2.99 2.94pm

Forward premiums and discounts apply to the US dollar

STERLING INDEX

	Oct 15	Previous
8.30 am	80.5	80.4
9.00 am	80.5	80.3
10.00 am	80.4	80.8
11.00 am	80.4	80.6
Noon	80.4	80.7
1.00 pm	80.4	80.7
2.00 pm	80.3	80.8
3.00 pm	80.3	80.8
4.00 pm	80.3	80.4

CURRENCY MOVEMENTS

Oct 15	Bank of England Index	Morgan ** Guaranty Changes %
Sterling	80.3	-29.30
U.S Dollar	65.1	-12.10
Canadian Dollar	90.5	-11.38
Austrian Schilling	115.9	+17.60
Belgian Franc	109.8	-3.36
Danish Krone	113.4	+8.20
D-Mark	127.3	+34.92
Swiss Franc	115.8	+24.89
Dutch Guilder	121.5	+23.78
French Franc	108.6	-8.61
Lira	76.1	-36.30
Yen	179.3	+120.05
Peseta	88.6	-32.43

Morgan Guaranty changes: average 1980-1982=100. Bank of England (Base Average 1985=100) **Rates are for Oct 14

CHICAGO

U.S. TREASURY BONDS (CBT) 8% $100,000 32nds of 100%

	Close	High	Low	Prev.
Dec	121-30	122-06	121-07	121-07
Mar	120-23	120-31	120-02	120-01
Jun	119-21	119-29	119-03	118-31
Sep	118-21	118-26	118-02	117-31
Dec	118-06	118-08	117-20	117-15
Mar	117-10	-	-	116-22
Jun	116-16	-	-	115-31
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

OTHER CURRENCIES

Oct 15	£	$
Argentina	1.5080 - 1.5090	0.9980 - 0.9990
Australia	2.2810 - 2.2825	1.5090 - 1.5100
Brazil	225.500 - 225.610	149.265 - 149.269
Finland	8.6215 - 8.6515	5.7040 - 5.7340
Greece	356.100 - 358.570	235.600 - 236.000
Hong Kong	11.6765 - 11.6775	7.7250 - 7.7260
Iran	2392.70 - 2395.75	1583.00 - 1585.00
Korea(Sth)	1224.15 - 1224.30	809.90 - 810.00
Kuwait	0.45120 - 0.45270	0.29850 - 0.29950
Luxembourg	53.65 - 53.75	35.45 - 35.55
Malaysia	3.8435 - 3.8455	2.5430 - 2.5440
Mexico	4.7025 - 4.7055	3.1110 - 3.1130
N.Zealand	2.7450 - 2.7480	1.8160 - 1.8185
Saudi Ar	5.6685 - 5.6695	3.7505 - 3.7515
Singapore	2.3700 - 2.3715	1.5680 - 1.5690
S.Af (Cm)	5.0480 - 5.0515	3.3405 - 3.3420
S.Af (Fn)	6.2425 - 6.2575	4.1300 - 4.1400
Taiwan	40.50 - 40.65	26.80 - 26.90
U.A.E.	5.5510 - 5.5530	3.6725 - 3.6735

CURRENCY RATES

Oct 15	Bank ‡ rate %	Special * Drawing Rights	European † Currency Unit
Sterling	-	0.928593	0.777073
U.S Dollar	3.00	1.41954	1.17315
Canadian $	4.87	1.88302	1.55477
Austrian Sch	5.75	15.9812	13.3422
Belgian Franc	6.50	49.9217	41.7992
Danish Krone	7.75	9.25327	7.71118
D-Mark	6.25	2.27041	1.89651
Dutch Guilder	5.50	2.58710	2.13319
French Franc	-	8.07647	6.72331
Italian Lira	8.5	2258.25	1886.55
Japanese Yen	1.75	150.755	125.468
Norway Krone	-	9.89001	8.34284
Spanish Peseta	-	185.392	153.471
Swedish Krona	11.50	11.2200	9.29719
Swiss Franc	4.50	1.99403	1.67408
Greek Drach	19	N/A	277.226
Irish Punt	-	N/A	0.808175

‡ Bank rate refers to central bank discount rates. These are not quoted by the UK, Spain and Ireland. † European Commission Calculations. * All SDR rates are for Oct 14

POUND SPOT - FORWARD AGAINST THE POUND

Oct 15	Day's spread	Close	One month	% p.a.	Three months	% p.a.
US	1.5080 - 1.5170	1.5120 - 1.5130	0.36-0.34cpm	2.78	0.94-0.91pm	2.45
Canada	1.9985 - 2.0140	2.0130 - 2.0140	0.24-0.17cpm	1.22	0.62-0.48pm	1.09
Netherlands	2.7400 - 2.7600	2.7425 - 2.7525	½-¼cdis	-0.82	¾-⅝dis	-0.73
Belgium	53.60 - 54.00	53.65 - 53.75	16-23cdis	-4.56	52-63dis	-4.28
Denmark	9.9125 - 9.9700	9.9275 - 9.9375	2⅝-3½oredis	-3.78	7⅞-8½dis	-3.20
Ireland	1.0400 - 1.0475	1.0405 - 1.0415	0.07-0.09cdis	-0.92	0.22-0.27dis	-0.94
Germany	2.4400 - 2.4525	2.4400 - 2.4450	⅛-¼pfdis	-0.92	½-⅝dis	-0.92
Portugal	252.25 - 254.25	252.60 - 253.50	111-121cdis	-5.50	330-354dis	-5.41
Spain	197.00 - 198.70	197.10 - 197.40	65-73cdis	-4.26	192-208dis	-4.07
Italy	2388.25 - 2414.25	2399.00 - 2400.00	5-7liredis	-3.00	17-19dis	-3.00
Norway	10.7200 - 10.7825	10.7300 - 10.7400	¼-1oredis	-0.70	1-1¾dis	-0.51
France	8.6350 - 8.6675	8.6425 - 8.6525	¾-1¼cdis	-1.39	2⅝-3dis	-1.30
Sweden	11.8700 - 12.0550	11.9025 - 11.9125	1⅞-2½oredis	-2.20	5-6dis	-1.85
Japan	161.50 - 163.00	161.50 - 162.50	½-⅜ypm	3.24	1⅜-1¼pm	3.24
Austria	17.15 - 17.25	17.18 - 17.19	1⅛-2⅛grodis	-1.14	2⅝-4⅝dis	-0.84
Switzerland	2.1500 - 2.1650	2.1525 - 2.1625	¼-⅛cpm	1.04	¾-⅝pm	1.27
Ecu	1.2880 - 1.2970	1.2895 - 1.2905	0.16-0.21cdis	-1.72	0.52-0.60dis	-1.74

Commercial rates taken towards the end of London trading. Six-month forward dollar 1.70-1.65pm . 12 Month 3.00-2.90pm.

DOLLAR SPOT - FORWARD AGAINST THE DOLLAR

Oct 15	Day's spread	Close	One month	% p.a.	Three months	% p.a.
UK†	1.5080 - 1.5170	1.5120 - 1.5130	0.36-0.34cpm	2.78	0.94-0.91pm	2.45
Ireland†	1.4440 - 1.4540	1.4525 - 1.4535	0.48-0.44cpm	3.72	1.26-1.21pm	3.40
Canada	1.3225 - 1.3320	1.3305 - 1.3315	0.16-0.18cdis	-1.53	0.42-0.48dis	-1.35
Netherlands	1.8135 - 1.8220	1.8155 - 1.8165	0.51-0.54cdis	-3.47	1.38-1.44dis	-3.11
Belgium	35.40 - 35.70	35.45 - 35.55	21.00-23.00cdis	-7.44	57.00-63.00dis	-6.76
Denmark	6.5575 - 6.5825	6.5650 - 6.5700	3.40-3.70oredis	-6.49	9.00-9.70dis	-5.69
Germany	1.6110 - 1.6200	1.6140 - 1.6150	0.50-0.51pfdis	-3.75	1.35-1.37dis	-3.37
Portugal	167.00 - 167.95	167.10 - 167.20	111-116cdis	-8.15	316-331dis	-7.74
Spain	130.20 - 131.15	130.50 - 130.60	75-79cdis	-7.08	210-218dis	-6.56
Italy	1585.00 - 1586.00	1586.25 - 1586.75	7.50-8.00liredis	-5.86	21.00-21.80dis	-5.40
Norway	7.0675 - 7.1250	7.0850 - 7.1000	1.85-2.10oredis	-3.34	5.10-5.50dis	-2.99
France	5.7050 - 5.7375	5.7150 - 5.7200	1.92-2.02cdis	-4.13	5.33-5.48dis	-3.78
Sweden	7.8400 - 7.9575	7.8700 - 7.8750	3.10-3.40oredis	-4.95	8.25-8.75dis	-4.32
Japan	106.75 - 107.25	107.00 - 107.10	0.06-0.05ypm	0.62	0.24-0.23pm	0.88
Austria	11.3350 - 11.3900	11.3550 - 11.3600	3.30-3.55grodis	-3.62	9.00-9.75dis	-3.30
Switzerland	1.4230 - 1.4300	1.4260 - 1.4270	0.18-0.19cdis	-1.47	0.40-0.45dis	-1.21
Ecu†	1.1675 - 1.1735	1.1715 - 1.1725	0.45-0.43cpm	4.51	1.23-1.20pm	4.15

Commercial rates taken towards the end of London trading. † UK, Ireland and Ecu are quoted in US currency. Forward premiums and discounts apply to the US dollar and not to the individual currency.

EXCHANGE CROSS RATES

[illegible]	[illegible]

Yen per 1,000: French Fr. per 10: Lira per 1,000: Belgian Fr. per 100: Peseta per 100.

EURO-CURRENCY INTEREST RATES

[illegible]	[illegible]

FT LONDON INTERBANK FIXING

[illegible]	[illegible]

MONEY RATES

[illegible]	[illegible]

LONDON MONEY RATES

[illegible]	[illegible]

LONDON RECENT ISSUES

EQUITIES

[illegible]	[illegible]

FIXED INTEREST STOCKS

[illegible]	[illegible]

RIGHTS OFFERS

[illegible]	[illegible]

BANK OF ENGLAND TREASURY BILL TENDER

[illegible]	[illegible]

WEEKLY CHANGE IN WORLD INTEREST RATES

	Oct 15	change
LONDON		
Base rates	6	Unch'd
7 day Interbank	6⅛	+1/16
3-month Interbank	5⅞	-1/16
Treasury Bill Tender	5.3271	+0.1223
Band 1 Bills	5⅝	Unch'd
Band 2 Bills	5⅝	Unch'd
Band 3 Bills	-	-
Band 4 Bills	-	-
3 Mth. Treasury Bill	5⅜	Unch'd
1 Mth. Bank Bills	5⅝	+1/32
3 Mth. Bank Bills	5½	-1/32
TOKYO		
One month	-	-
Three month	-	-
BRUSSELS		
One month	10¼	+½
Three month	10	+⅜
AMSTERDAM		
One month	6.445	-0.055
Three month	6.355	+0.015

	Oct 15	Change
NEW YORK		
Prime rates	6	Unch'd
Federal Funds	3⅛	-⅛
3 Mth. Treasury Bills	3.05	+0.02
6 Mth. Treasury Bills	3.18	+0.02
3 Mth. CD	3.04	-0.02
FRANKFURT		
Lombard	7.25	Unch'd
One mth. Interbank	6.75	-0.05
Three month	6.625	-0.025
PARIS		
Intervention Rate	6.75	Unch'd
One mth. Interbank	7.10	-0.10
Three month	7.01	-0.15
MILAN		
One month	9½	+⅜
Three month	9⅜	+⅜
DUBLIN		
One month	7	Unch'd
Three month	6⅞	Unch'd

BASE LENDING RATES

	%
Adam & Company	6
Allied Trust Bank	6
AIB Bank	6
●Henry Ansbacher	6
Bank of Baroda	6
Banco Bilbao Vizcaya	6
Bank of Cyprus	6
Bank of Ireland	6
Bank of India	6
Bank of Scotland	6
Barclays Bank	6
Brit Bk of Mid East	6
●Brown Shipley	6
CL Bank Nederland	6
Citibank NA	6
City Merchants Bank	6
Clydesdale Bank	6
The Co-operative Bank	6
Coutts & Co	6
Credit Lyonnais	6
Cyprus Popular Bank	6
Duncan Lawrie	6
Exeter Bank Limited	7
Financial & Gen Bank	7
●Robert Fleming & Co	6
Girobank	6
●Guinness Mahon	6
Habib Bank AG Zurich	6
●Hambros Bank	6
Heritable & Gen Inv Bk.	6
●Hill Samuel	6
C. Hoare & Co	6
Hongkong & Shanghai	6
Julian Hodge Bank	6
●Leopold Joseph & Sons	6
Lloyds Bank	6
Meghraj Bank Ltd	6
Midland Bank	6
* Mount Banking	6
* (In administration)	
NatWestminster	6
Nykredit Mortgage Bnk	6.5
Rea Brothers	6
* Roxburghe Bank Ltd	6
* (In administration)	
Royal Bk of Scotland	6
●Smith & Williamson Secs	6
Standard Chartered	6
TSB	6
●United Bk of Kuwait	6
Unity Trust Bank Plc	6
Western Trust	6
Whiteaway Laidlaw	6
Wimbledon & Sth West	7
Yorkshire Bank	6

● Members of British Merchant Banking & Securities Houses Association

STOCK INDICES

	Oct 15	Oct 14	Oct 13	Oct 12	Oct 11	Oct 8	1993 High	1993 Low	Since Compilation High	Since Compilation Low
FT-SE 100	3120.8	3086.3	3080.9	3094.7	3102.2	3108.6	3120.8	2737.6	3120.8	986.9
FT-SE Mid 250	3479.8	3464.4	3468.3	3474.9	3482.2	3477.3	3513.3	2876.3	3513.3	1379.4
FT-SE-A 350	1556.6	1541.7	1540.0	1546.0	1549.7	1551.6	1556.6	1348.7	1556.6	664.5
FT-A All-Share	1541.91	1527.78	1526.24	1531.85	1535.37	1536.97	1541.91	1088.13	1541.91	61.92
FT-SE Eurotrack 100	1330.52	1315.57	1317.05	1315.91	1319.96	1321.16	1330.52	1063.02	1330.52	900.45
FT-SE Eurotrack 200	1407.10	1391.70	1391.36	1393.81	1401.02	1405.46	1407.10	1144.79	1407.10	938.62
FT Ordinary	2354.3	2327.4	2333.2	2350.8	2358.7	2359.1	2414.2	2124.7	2414.2	49.4
FT Government Secs.	102.72	102.70	102.81	102.84	102.55	102.68	102.86	93.28	127.40	49.18
FT Fixed Interest	124.01	124.18	124.27	124.42	124.36	124.21	125.20	106.67	125.20	50.53
FT Gold Mines	213.7	214.6	216.6	208.2	211.2	203.7	249.2	60.0	734.7	43.5

LONDON SHARE SERVICE

BRITISH FUNDS

[illegible]	[illegible]

OTHER FIXED INTEREST

[illegible]	[illegible]

Continued on next page

FT-ACTUARIES WORLD INDICES

Jointly compiled by The Financial Times Limited, Goldman, Sachs & Co. and NatWest Securities Limited in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS Figures in parentheses show number of lines of stock	FRIDAY OCTOBER 15 1993 US Dollar Index	% chg ($) since 31/12/92	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	Local % chg from 31/12/92	Gross Div. Yield	THURSDAY OCTOBER 14 1993 US Dollar Index	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	DOLLAR INDEX 1993 High	1993 Low	Year ago (approx)
Australia (69)	154.83	+23.7	151.77	104.77	129.96	155.45	+26.5	3.32	154.45	151.35	104.91	129.61	154.61	154.83	117.39	119.54
Austria (17)	180.87	+29.0	177.30	122.40	151.82	151.69	+29.2	1.04	180.05	176.43	122.30	151.09	150.57	182.28	131.16	154.38
Belgium (42)	152.61	+14.5	149.59	103.26	128.10	133.61	+22.3	4.31	152.12	149.06	103.31	127.64	132.99	156.76	131.19	139.27
Canada (107)	129.16	+11.7	126.61	87.40	108.41	124.49	+16.9	2.72	128.07	125.49	86.88	107.46	123.06	130.38	111.41	113.48
Denmark (32)	236.70	+27.2	232.02	160.17	198.68	211.43	+33.1	1.07	234.58	229.86	159.33	196.84	209.21	239.12	185.11	195.52
Finland (23)	120.96	+73.8	118.56	81.85	101.53	145.05	+89.8	0.71	120.05	117.63	81.54	100.73	144.46	120.96	65.50	59.04
France (97)	169.08	+14.9	165.73	114.40	141.91	151.84	+18.9	3.04	167.95	164.57	114.06	140.91	150.10	173.05	142.72	147.26
Germany (60)	135.64	+30.4	132.96	91.80	113.85	113.85	+30.0	1.86	134.24	131.54	91.19	112.64	112.64	136.13	101.59	108.79
[illegible]	[illegible]	[illegible]	337.91	233.27	289.37	341.91	+55.3	3.03	333.35	326.65	226.41	279.73	330.65	344.73	218.82	247.53
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	133.67
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57.05
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	109.41
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	251.94
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	331.63
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	159.65
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	39.40
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	136.69
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	183.57
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	153.19
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	112.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	151.75
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	114.04
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	167.83
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	169.09
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	135.92
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	142.25
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	113.80
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	122.75
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	164.70
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	116.49
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	156.89
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	123.46
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	134.69
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	137.57
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	153.79
The World Index (2186)	170.88	+22.3	167.50	115.50	143.27	149.58	+17.4	2.18	169.60	166.33	115.23	141.80	148.55	170.88	137.32	137.57

Base values: Dec 31, 1986 = 100; Finland: Dec 31, 1987 = 115.037 (US $ Index), 90.791 (Pound Sterling) and 94.94 (Local); Nordic: Dec 30, 1988 = 139.65 (US $ Index), 114.45 (Pound Sterling) and 123.22 (Local). Copyright, The Financial Times Limited, Goldman, Sachs & Co. and NatWest Securities Limited. 1987. Constituent change during the week ending 15/10/93: Addition: Marriott International (USA).

MONEY MARKET FUNDS

Money Market Trust Funds

[illegible]	[illegible]

Money Market Bank Accounts

[illegible]	[illegible]

NOTES- Gross: Contractual rate of interest payable, not taking account of the deduction of basic rate income tax. Net: Rate of interest payable after allowing for deduction of basic rate income tax. Gross CAR: Gross rate annualised to take account of compounding of interest paid other than once a year. 'Compounded Annual Rate' Int Cr: Frequency at which interest is credited to the account.

LONDON SHARE SERVICE

AMERICANS

CANADIANS

BANKS

BREWERS & DISTILLERS

BUILDING MATERIALS

BUSINESS SERVICES

CHEMICALS

CONGLOMERATES

CONTRACTING & CONSTRUCTION

ELECTRICALS

ELECTRICALS - Cont.

ELECTRICITY

ELECTRONICS

ENGINEERING-AEROSPACE

ENGINEERING-GENERAL

ENGINEERING-GENERAL - Cont.

FOOD MANUFACTURING

FOOD RETAILING

HEALTH & HOUSEHOLD

HOTELS & LEISURE

HOTELS & LEISURE - Cont.

INSURANCE BROKERS

INSURANCE COMPOSITE

INSURANCE LIFE

INVESTMENT TRUSTS

INVESTMENT TRUSTS - Cont.

LONDON SHARE SERVICE

INVESTMENT TRUSTS - Cont.

[illegible]

INVESTMENT COMPANIES

[illegible]

MEDIA

[illegible]

MERCHANT BANKS

[illegible]

METALS & METAL FORMING

[illegible]

MISCELLANEOUS

[illegible]

MOTORS

[illegible]

OIL & GAS

[illegible]

OIL & GAS - Cont.

[illegible]

OTHER FINANCIAL

[illegible]

OTHER INDUSTRIALS

[illegible]

PACKAGING, PAPER & PRINTING

[illegible]

PACKAGING, PAPER & PRINTING - Cont.

[illegible]

PROPERTY

[illegible]

STORES

[illegible]

STORES - Cont.

[illegible]

TELEPHONE NETWORKS

[illegible]

TEXTILES

[illegible]

TRANSPORT

[illegible]

WATER

[illegible]

SOUTH AFRICANS

[illegible]

PLANTATIONS

[illegible]

MINES

[illegible]

MINES - Cont.

[illegible]

GUIDE TO LONDON SHARE SERVICE

Company classifications are based on those used for the FT-Actuaries Indices and FT-Actuaries World Indices.

Closing mid-prices are shown. Prices and net dividends are in pence unless *otherwise indicated.*

Where stocks are denominated in currencies other than sterling, this is indicated after the name.

Dividend covers are based on "maximum" distribution; this compares gross dividend costs to profit after taxation, excluding exceptional profits/losses but including estimated extent of offsettable ACT. Market Capitalisations are published on Tuesdays-Saturdays except for Investment Trusts and British Funds.

- □ Indicates the most actively traded stocks. This includes UK stocks where transactions and prices are published continuously through the Stock Exchange Automated Quotation system (SEAQ).
- ● "Tap Stock"
- † Interim since increased or resumed
- ‡ Interim since reduced, passed or deferred
- ‡‡ Tax-free to non-residents on application
- ◆ Figures or report awaited
- ♥ *Not officially UK listed; dealings permitted under rule 535(4)(a)*
- ♣ Free annual/interim report available, see details below.
- ✱ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ *Not officially UK listed; dealings permitted under Rule 535(2)*
- ¶ Price at time of suspension
- ¶ Indicated dividend after pending scrip and/or rights issue; cover relates to previous dividend or forecast.
- ◆ Merger bid or reorganisation in progress
- § Forecast dividend; cover based on earnings updated by latest interim statement.
- ♣ Unregulated collective investment schemes.

a Annualised dividend. b Figures based on prospectus or other official estimates. c Cents. f Flat yield. g Assumed dividend. h Assumed dividend after scrip issue. m Interim higher than previous total. n Rights issue pending. q Earnings based on preliminary figures. s *Dividend excludes a special payment.* t Indicated dividend: cover relates to previous dividend. u Forecast, or estimated annualised dividend rate, cover based on previous year's earnings. v Not subject to ACT. z Dividend includes a special payment: Cover does not apply to special payment. E Auction basis. F Dividend based on prospectus or other official estimates for 1994-95. G Assumed dividend after pending scrip and/ or rights issue. H Dividend based on prospectus or other *official estimates for* 1993. K Dividend based on prospectus or other official estimates for 1992-93. L Estimated annualised dividend, cover based on latest annual earnings. M Dividend based on prospectus or other official estimates for 1993-94. N Dividend based on prospectus or other official estimates for 1992. P Figures based on prospectus or other official estimates for 1994. Q Gross. R Forecast annualised dividend, cover based *on prospectus or other* official estimates. T Figures assumed. W Pro forma figures. Z Dividend total to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xl ex capital distribution

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1225 a year for each security shown, subject to the Editor's discretion

FT Share Service

The following changes have been made to the FT Share Information Service: *Additions: Baynes (C) Pf. (Other Inds.),* Beta Viet Nam Units (Inv. Co's.) and *Korea China* Super Fund (Inv. Tst.). Deletions: BTR Wrrts. 92/93 (Other Inds.), Miskin (Con. & Con.), Pan Pacific (Oil & Gas) and Reflex Inv. (Electronics).

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4 pm close October 15

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

1993 High	Low	Stock	Div	Yld. %	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
14⅝	11½	AAR Corp	0.48	3.5	662	52	13⅞	13¼	13¼	-⅛
29⅞	13¾	A L Labs A	0.18	1.0	35	183	17⅞	17⅝	17⅝	-⅛
67¼	54⅝	AMP Inc	1.60	2.5	22	1506	64½	64¼	64¼	
72¾	56½	ANR			17	3479	65⅞	65	65¼	+⅛
3⅞	1¾	ARX			14	442	3¾	3⅝	3¾	
51½	29⅞	ASA	2.00	4.4	30	324	46	45⅛	45⅞	-½
30¾	22⅝	Abbott Lab	0.68	2.5	16	13813	27⅝	27⅛	27⅞	+¼
12⅞	8¼	AbitibiPr	0.50	6.1	3	39	8⅜	d8¼	8¼	-⅛
15⅝	8¼	Acptncein			46	347	u15⅝	14¾	14¾	-⅞
36	25½	ACE Ltd	0.92	2.8		2662	33½	33⅛	33¼	+⅛
12	10⅝	ACM Gvt In	0.96	8.4		480	11⅝	11¼	11⅜	
10	9⅛	ACM GvOpp x	0.80	8.1		206	u10	9⅞	9⅞	-⅛
9⅞	8¾	ACM Gvt Sp x	0.80	8.2		2294	9¾	9⅝	9¾	
11⅝	10½	ACM Gvt Se x	0.96	8.3		137	11½	11⅜	11½	
11⅝	9⅝	ACM Man x	1.08	9.4		254	u11⅝	11½	11½	-⅛
9⅜	8⅝	ACM Managd x	0.72	7.7		146	u9⅜	9⅛	9⅜	+⅛
12⅜	7¾	Acme Cleve	0.44	4.5	13	142	9⅞	9⅝	9¾	+¼
9¼	6⅜	Acme Elect			62	235	8¾	8¼	8¾	+⅛
27⅝	18⅜	Acordia	0.44	1.8	14	42	25⅛	25	25	
16	10⅞	Acuson			34	358	12⅝	12½	12½	-⅛
21⅞	18¼	Adams Expr	0.48	2.5	0	224	19⅛	18⅞	19⅛	+⅛
68¼	45½	Ad Micro	3.00	6.0		721	50¼	49⅞	50	+⅛
32⅞	17⅝	Ad Micro P	3.00	14.8	7	14017	20⅝	20⅛	20¼	+⅜
7⅞	5½	Advest Grp	0.16	2.1	13	243	7¾	7⅝	7⅝	
24¾	14¼	Advo Inc	0.08	0.5	16	325	15⅜	15	15¼	+⅛
50¾	41⅛	Aegon ADR	1.23	2.4	10	57	u51¼	50⅞	51⅛	+½
64⅛	43⅜	Aetna Lf	2.76	4.3	44	5458	64	63½	63⅝	-⅜
34	26⅜	Aflac	0.40	1.3	15	657	30⅝	30⅜	30½	
22⅛	16¾	Ahmanson	0.88	4.6	8	1757	19⅝	19¼	19¼	-⅛
7¾	3⅝	Aileen Inc			5	24	3⅞	3⅞	3⅞	
43½	24⅞	Air Pr Chm	0.92	2.3	15	3393	40	39½	40	+⅜
26½	18⅛	Airbne Frt	0.30	1.2	33	290	25½	25¼	25½	
41⅞	18¼	Airgas Inc			47	285	u43⅞	41½	43⅛	+1⅞
15⅜	10½	Airlease	1.72	11.6	11	65	15	14⅞	14⅞	-⅛
106½	101	AlaPw8.16	8.16	7.7		z100	u106½	106½	106½	+1¼
107	102½	Alab 8.28C	7.28	7.1		z20	102⅞	102⅞	102⅞	
[illegible]										

- A - (continued), - B -, - C -, - D -, - E -, - F -, - G -, - H -, - I -, - J -, - K -, - L -, - M -, - N -, - O -, - P - Q -, - R -

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Continued on next page

مكتبة الأصل

4 pm close October 15

NYSE COMPOSITE PRICES

Continued from previous page

- S -

1993 High	Low	Stock	Div.	Yld. %	P/E	Sls 100s	High	Low	Close Quote	Chng. Prev. Close
22	15½	S Anita Rt x	1.36	7.0	17	72	19½	19¼	19½	+¼
20¾	14⅞	SCOR US Cp	0.32	2.0	200	71	16¼	16	16	-⅜
30	20	SPS Techno	1.28	4.3	22	32	u30	29¾	29¾	-¼
15⅜	12⅞	Sabine Rt x	1.74	11.3	10	20	u15⅜	15¼	15⅜	+⅛
14	8⅞	Safecard	0.20	1.5	13	121	13¾	13¾	13⅞	-⅛
23½	16⅞	Safeg'd Sc			10	172	22	21⅞	22	+⅛
24¾	14⅛	SafetyKln	0.36	2.5	22	1414	14⅝	14⅜	14⅝	+¼
21¼	10⅞	Safeway			25	2790	u21⅜	21⅛	21¼	
4⅞	2	Safeway wt96				262	u4⅞	4¾	4¾	
55	37½	StJoePaper	0.20	0.4	145	55	49½	49⅛	49⅜	+¼
37⅞	31	StJosL&P	1.76	5.0	14	14	35½	35¼	35½	
94	75	St Paul's	2.80	3.0	15	2171	92¾	90⅞	92⅝	+1¾
11⅜	7½	Salant Cp			4	14	8⅛	8	8	-⅛
75¼	39⅞	Sallie Mae	1.20	2.6	10	3464	48	46⅝	46⅞	+¼
14⅜	13	Salomon Br	0.32	2.3		283	14⅛	14	14⅛	+⅛
51⅞	34	Salomoninc	0.64	1.3	12	2332	50	49⅛	49¼	-½
27¾	23¼	SanDgo G&E	1.48	5.6	14	211	26⅝	26¼	26½	+¼
5	3½	SantaFeEDu	0.40	8.2	48	10	4⅞	4⅞	4⅞	
11⅞	9⅛	SantaFeERt	0.16	1.6	506	1150	10⅛	10	10⅛	
40¾	35¼	SantaFePac	2.80	7.2	13	33	39⅛	39	39	-⅛
19⅝	12¾	SantaFPac	0.10	0.5	12	4499	19⅛	18⅞	19	-¼
31⅛	21	Sara Lee	0.58	2.1	20	25238	28⅛	26⅝	28	+1⅝
51⅞	40⅛	Scana Corp	2.74	5.3	15	312	51⅝	51¼	51¾	
25¾	21¼	Scecorp	1.42	6.3	13	9593	22⅞	22⅛	22½	+½
38⅞	23⅜	SchererRP			27	276	32⅞	32¼	32⅞	+⅛
70⅞	51¾	ScheringPl	1.80	2.6	17	3337	68¾	67½	68⅛	+⅛
68⅞	55⅛	Schl'berger	1.20	1.9	24	4874	63⅞	63	63⅛	-¼
38⅛	16½	Schwab(C)	0.20	0.6	17	1603	37¼	36⅛	36¼	-¾
7¾	5⅝	Schwitzer			41	z100	7⅛	7⅛	7⅛	-⅛
38¾	17¾	ScientAtln	0.12	0.3	58	2071	u38⅞	37⅞	38½	+1⅜
13⅞	9⅛	Scotsman	0.10	0.8	12	36	12⅛	12⅛	12⅛	-⅛
41	31	ScottPaper	0.80	2.5	19	812	32¾	32½	32⅝	
25⅜	14¼	ScuddNAsF	0.21	0.8		210	u26⅜	25⅛	25¾	+⅜
11⅛	7½	ScuddNEuF	0.16	1.5		343	11	10⅝	10⅞	

- T -

- U -

- V -

- W -

- X - Y - Z -

NASDAQ NATIONAL MARKET

4 pm close October 15

AMEX COMPOSITE PRICES

4 pm close October 15

MONDAY INTERVIEW

Ketchup in his veins

Mike Quinlan, chairman of McDonald's, talks to **Guy de Jonquières**

If there is one thing Mike Quinlan, chairman of McDonald's really relishes, it is getting out and selling the products. When he can, he drops in at one of the company's 14,000 restaurants, dons a smock and pitches in with employees in the kitchen or behind the counter.

"I can make hamburgers and Big Macs and fries. I'm a great counter person. I can work the drive-through," he says. "The restaurant activities have always been my favourite part of McDonald's. That's where we make or break the relationship with our customers."

Often, he will quiz diners about the quality of food and service, telling them only later what his job is. "I love relating to the customers. I'm very interested in what our constituency wants from us and how we can do things better. That is how you grow the business."

The hands-on enthusiasm rings true because the Mcfamily, as Mr Quinlan calls it, has been part of his life, man and boy, for 30 years. A jaunty 49-year-old who still speaks with the distinctive lilt of Chicago's Irish west side where he grew up, he started working with the company part-time to supplement his income while at college.

He joined full-time on graduation, after turning down a place at law school because he could not afford the fees. By his own admission, he is a "lifer" with the company. As the saying goes in McDonald's, he has ketchup in his veins.

With every passing week, more ketchup is poured on more McDonald's hamburgers in ever more restaurants around the globe. A further 900 will open this year, more than *twice the total number in operation* when Mr Quinlan joined the company. Next year, he aims to add another 1,000. On top of that, a proliferation of smaller outlets known as "special venues" is bringing McDonald's to places it has never reached before.

"We are in locations we never thought of seven or eight years ago. Airports, service stations, superhighways, cruise ships. Hospitals are going like crazy. We are in Wal-Mart [the US discount store chain], Tesco in Britain. We have kiosks all over the world. We're already on one train in Switzerland, and we'll soon be on another in Germany."

He can see no end to the growth. But then, he says, he never has been able to. He recalls that Raymond Kroc, the company's late founder, was first asked almost 30 years ago when the market would be saturated and replied laconically: "Hell, I don't know." "The answer," says Mr Quinlan, "is that you can't give an answer."

Nonetheless, he guesses that sales will at least double in the next decade – a conservative estimate, given that they trebled during the last one. "In 15 years," he says, "I think we will be a *giant* company."

Even in the US, where McDonald's has one restaurant for every 29,000 people and faces steadily increasing competition, he sees plenty still to go for. The game may be all about increasing share in a mature market, but McDonald's aims to do so profitably by offering more varied menus, such as chicken and pizza, lowering the break-even level of restaurants and sourcing raw materials more efficiently.

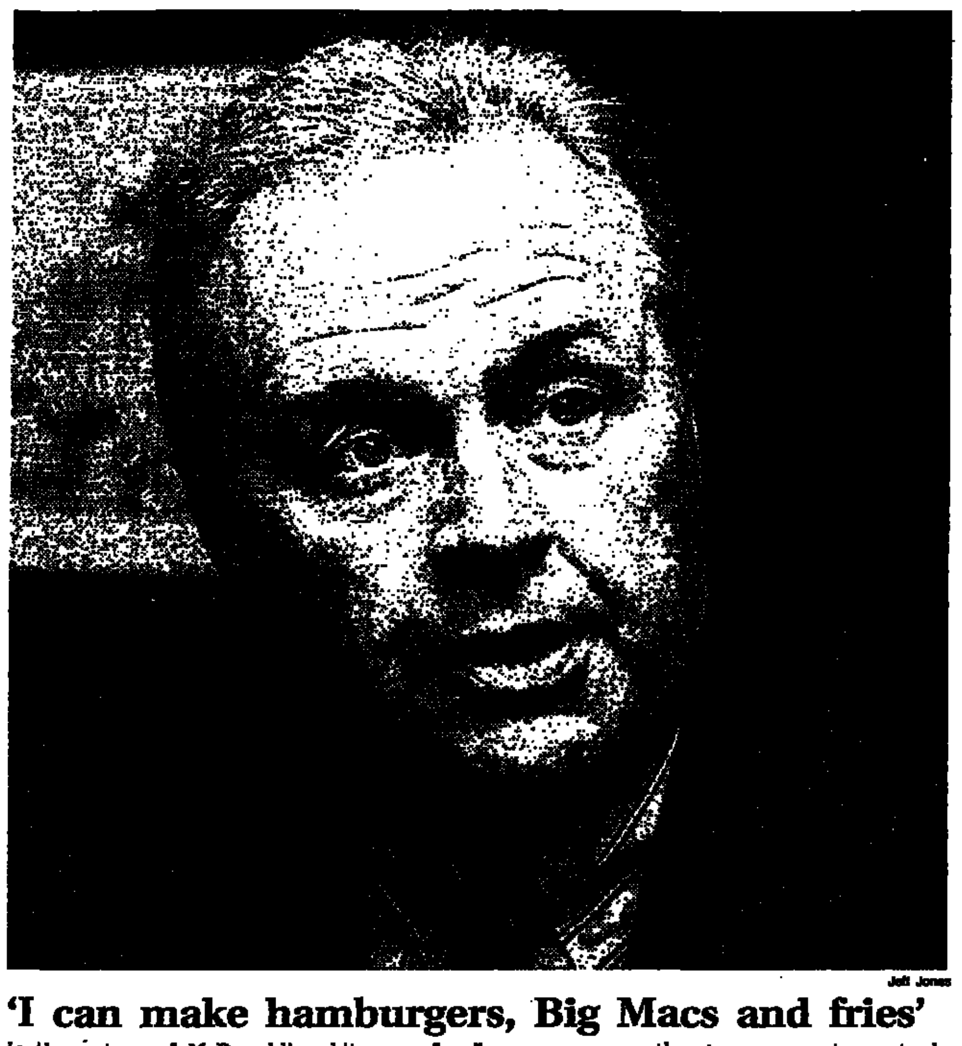
Outside the US, by contrast, the potential has barely been scratched. Though the company's operations span almost 70 countries, in most the fast-food market is in its infancy. In some, the opening of a new McDonald's amounts to a minor cultural revolution.

The restaurant in Moscow's Pushkin Square continues to generate sales volumes 12 times higher than the norm for outlets of its size, almost four years after it opened. The first two restaurants in Poland set records for customer traffic, while operations in China are profitable after only 18 months.

However, political uncertainties, limited consumer spending power, supply difficulties and the time needed to establish *the McDonald's* brand all make Mr Quinlan cautious about the speed of future expansion in the developing world. During this decade, he is counting on western Europe to act as the main engine of growth outside the US.

The prospect of increased size and management complexity does not daunt him, he says, because his rise through the ranks has given him first-hand experience of almost every aspect of the company's operations. Most of McDonald's top managers have also worked their way up from the bottom, a system he says provides stability and continuity.

What prevents the culture from becoming inward-looking is the nature of McDonald's compact with its 9,000 franchisees, some of whom are now in their third generation. "We don't stand back and say: 'Here's your franchise, pay us your royalty, now sink or swim.' We only succeed when they succeed. If their sales don't grow, our profits don't grow. That has a way of sorting things out, of prioritising the way you do business."



Jeff Jones

'I can make hamburgers, Big Macs and fries'

PERSONAL FILE

- **1944** Born Chicago. Educated Loyola University, BS, MBA.
- **1963** Part-time mailroom worker, McDonald's.
- **1966** Joined McDonald's full time as assistant buyer.
- **1980-82** President, McDonald's USA.
- **1982-89** Chief operating officer, McDonald's.
- **1987-** Chief executive officer.
- **1989-** Chairman.

McDonald's prides itself on imposing uniform standards and business systems throughout its operations, while still *instilling in each of its franchisees* a spirit of entrepreneurship. "I can go to restaurants in Norway, Singapore, Butte, Montana, or Glasgow, and honest to God, it's like talking to associates I've known for 25 years. I can go anywhere in the world and feel I'm a welcome member of the family."

To go on working, the formula needs continuously to be refined and improved. "We cannot allow ourselves to become a commodity. When customers think of McDonald's, they have to think of us as different. Whether it's our marketing, our children's programmes, our birthday parties, our community and charitable involvement, people expect a bit more of us."

This view of McDonald's as one big happy family, united in the quest for excellence, is not universally shared. In the US, fast food has become a byword in some quarters for a low-wage business offering dreary jobs to a shiftless army of unskilled workers. To its critics overseas, on the other hand, the company is the ultimate symbol of the spread of American throw-away culture.

Mr Quinlan will have none of it. True, the company relies heavily on casual workers, and turnover among counter staff is high. But it offers training and unrivalled promotion opportunities to young people who stay with it. Furthermore, as he describes it, work in McDonald's restaurants is not the soulless routine alleged by some critics, but a genuine community enterprise.

"The younger people use the older full-time staff as *consiglieri*. They ask them advice about life, not just about the job. Each store takes on the characteristics of a family. You may think I'm kidding, but I'm not. A thousand little dramas are played out every day in each of our restaurants."

Hostility, he insists, is often the result of ignorance. Such was the case with the French farmers, who recently protested against the US stance on agricultural trade by picketing its restaurants and burning effigies of Ronald McDonald. The company defused the situation by patiently pointing out that 90 per cent of the raw materials used in its restaurants were locally produced.

Displays of good corporate citizenship are not, however, enough to quell frequent resistance to McDonald's choice of new sites. It has recently fought lengthy planning battles to open restaurants in Hampstead, north London, in the Piazza di Spagna in Rome and near the Eiffel Tower in Paris. (It eventually won the first two, but lost the third.)

Mr Quinlan replies that McDonald's will go as far as it can to tailor the design of its restaurants to local conditions. "But when all is said and done, the answer lies in the consumer response when we finally open the doors. Piazza di Spagna opened with blockbuster volumes from day one, and I've seen the same thing happen all over the world. If we are providing people with what they want, they will tell us if they want us or not. I rest my case on that.

"When I look at my colleagues around the world, I think we all have a large dose of humility and a genuine love of serving our customers. It's kind of a religion with us. I don't think that's corny. It's the lifeblood of our business."

Quarterbacks on the wrong pitch

MICHAEL PROWSE on AMERICA

The merit of co-operation between government, big business and unions seems an article of faith in the White House. The clearest sign of a tilt toward "corporatist" policies was President Bill Clinton's recent announcement that the federal government would join forces with the Big Three American carmakers to develop a new generation of fuel-efficient supercars. "We want to position the US auto industry to be the principal force in the marketplace of the next century," said Mr Al Gore, the vice-president. He added that it was absurd that commercial carmakers were still dependent on the internal combustion engine, a technology dating from 1876.

The $500m supercar initiative is the most visible element in an emerging web of industrial policies. The administration has allocated $1.5bn to help private companies create the world's first "information superhighways". It is showering subsidies on high-tech industries and even helping dinosaurs such as shipbuilding. To appease trade unions, there is talk of a substantial increase in the minimum wage and, conceivably, changes in labour laws to improve the bargaining position of workers.

Spending on industrial policy is admittedly trivial in the context of a $1,500bn budget. But the economic culture in Washington is changing. The Competitiveness Policy Council, a corporatist coalition of business, union and government officials, is urging Mr Clinton to make competitiveness "the centre-piece of US economic policymaking". Excited by the deal with Detroit, it advocates a depressingly mushy set of policies, including tax subsidies for investment and regular doses of devaluation to ensure "equitable" trading conditions for US companies. The council's chairman, Mr Fred Bergsten, also advocates "managed" trade as a way of levering open foreign markets.

Co-operation between government and business to improve competitiveness may seem harmless enough. Now that the cold war is over, the huge financial resources of the federal laboratories surely should be harnessed to commercial as well as military goals. In its quest for jobs and higher living standards, why shouldn't the White House serve as an inspirational "quarterback" to US business?

The pragmatic case against corporatism is that, if Washington throws its weight behind American business, Brussels and Tokyo are certain to respond in kind. Instead of the arms race of past decades, Mr Clinton could face an equally stupid subsidies race, with ever larger industrial handouts being required to offset the largesse of competitors.

But there are also matters of principle at stake. Corporatism is a crude form of economic nationalism. The hard task for government today is surely to establish global rules and institutions that serve the economic interests of all individuals and companies – regardless of their origin or nationality. The best route is normally unhindered competition. In a market system, the government should be referee, not quarterback or coach.

Competitiveness, in any case, is a dubious concept on which to build an economic strategy. The US can become more competitive only if other regions become less competitive. Should the US really make policies designed to reduce the competitiveness of Europe and Japan the centre-piece of economic policy-making, as Mr Bergsten's council suggests? Of course not: the federal government should concentrate on its fundamental economic duties, such as keeping inflation under control, balancing its budget and minimising the distortions imposed by taxes and regulations. Economic growth and the US's performance relative to other countries will be determined largely by factors beyond the control of politicians, such as private agents' propensity to work, *save and take risks*.

To see how little competitiveness may depend on public policy, consider Mr Bergsten's own Institute for International Economics. It may be a non-profit-making body, but as a provider of economic services it is rather typical of the new information economy. It has to compete, moreover, with many similar think-tanks and institutes, both in the US and abroad. What makes Fred competitive? There are many factors, including the skills of his staff. But the most important is Mr Bergsten's own entrepreneurial flair. He makes shrewd judgments about the economic topics that are going to hit the headlines and markets his timely products aggressively.

It is precisely the entrepreneurial ability to predict how consumer demand will change and to find cost-efficient ways of suppling new products that governs business success. Companies such as General Motors and IBM have run into trouble not because they lack talented staff or financial resources but because of a loss of entrepreneurial alertness.

Competitiveness is a near obsession for the administration and allied groups such as Mr Bergsten's council. Yet their reams of analysis say little, if anything, about entrepreneurship. The emphasis on failings in public policy is so total that the actual process of wealth creation is almost entirely overlooked. You would never suspect from the literature on competitiveness that the US's surge to global economic dominance at the end of the 19th century occurred at a time when federal spending was 3 per cent, rather than 23 per cent, of GDP.

The people and the treaty

IAN DAVIDSON on EUROPE

Germany's constitutional court ruling, giving the green light to the Maastricht Treaty of European Union, is a cause of celebration on at least two counts. After nearly two years of cliff-hanging setbacks and delays, the treaty can at last come into force. No one knows any more how this treaty will perform, but at least it has now been brought more or less intact to the starting line.

As a result, next week's European Community summit in Brussels should be a jolly party. We can expect plenty of the usual rhetoric from the usual Euro-enthusiasts about the deathless claims of the European ideal; and we can expect John Major to put in his predictable penny's worth, to reassure the Tory faithful that the treaty means even less than it says, thanks to his doughty defence of the national interest.

But the second cause of celebration is that the German ruling laid down an important marker for the need for political legitimacy. In the run-up to the decision, there had been widespread apprehension that the red-robed judges in Karlsruhe might tie the treaty in so many legal knots as to bring it crashing to the ground. Some feared the court would rule that the transfer of powers inherent in the treaty would be incompatible with German sovereignty; others that Maastricht was unacceptable because it gave too few powers to the European Parliament.

Instead, the judges merely ruled that the Maastricht treaty in particular, and the Community in general, are essentially conditional on the legitimation of popular democracy. And since popular democracy is still primarily expressed through national parliaments, the consequence is that Maastricht cannot be implemented without the support and approval of the German parliament. "The democracy principle does not prevent Germany joining a supranationally organised community of states," said the court. "But a precondition of membership is a guarantee that legitimation and influence by the people are secured within the association of states.

"It is principally the peoples of the member states who must legitimate this through their national parliaments . . . In addition, and increasingly as European nations grow together, democratic legitimation is conveyed by the European Parliament elected by the citizens of member states.

"If, as is currently the case, the peoples convey democratic legitimation through national parliaments, then the democratic principle sets limits on the expansion of the tasks and powers of the European Communities. The German Bundestag must retain tasks and powers of substantial weight."

As a description of political reality, this is an admirably pithy and middle-of-the-road synthesis – as far as it goes. German governments have long been in the forefront of those seeking a strengthening of the Community's political institutions, especially the European Parliament. But the plain fact is that the Community is still essentially a grouping of nation states. As a result, democratic legitimation has to come largely through national parliaments.

Unfortunately, the Karlsruhe judgment does not go far enough: it describes reality, but does not offer a solution to the political challenge of Maastricht. It is easy to underline the point that the Community is critically dependent on democratic support; not just because *all* claims to political legitimacy in Europe hang essentially on popular democracy, but because the Maastricht treaty in particular came within a whisker of being thrown out by the voters. Since power still lies mainly with the Council of Ministers, it is also easy to see that democracy must come mainly through national parliaments: denunciations of the Community as a threatening mega-state are simply the product of delirious fantasy.

The problem is that the Community's popular legitimacy has been severely shaken; the challenge facing the 12 is not just working out how to implement a treaty whose practical credibility has been battered by events but, even more important, how to recover popular support for the general objectives of the enterprise.

The Karlsruhe prescription is that the Bundestag (and other national parliaments) must exercise a bigger role in the Community process. This is a very proper thought, from a national point of view. But it is not clear how, in operative terms, it can be squared with any reasonably expeditious decision-making process in Brussels.

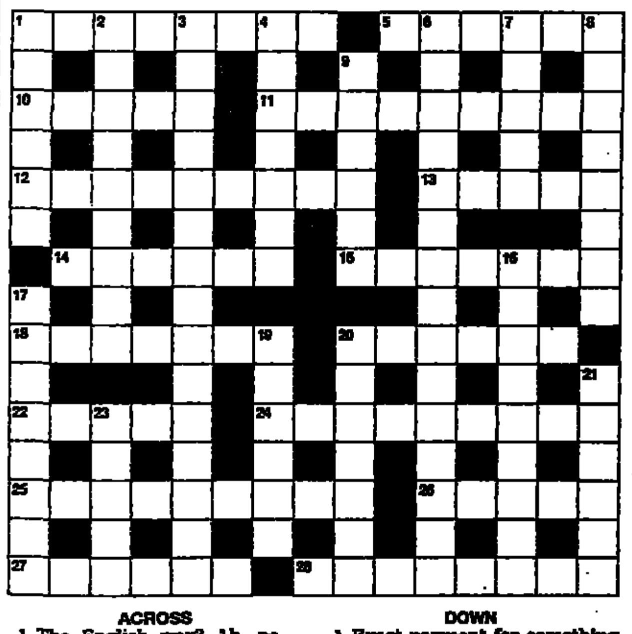
It is the role of parliaments to control initiatives taken by governments. But if all 12 parliaments increase their controlling function, the unstated premise of the prescription is that any or all of them must be able to slow the Community right down, and perhaps even stop it entirely. This could only help restore legitimacy to the Community in a very limited sense, and on the narrow assumption that the voters only want to be reassured that nothing much will be decided in Brussels in future.

Moreover, it is not easy to square a systematic increase in the controlling power of national parliaments with majority voting in the Council of Ministers, which will be strengthened by the Maastricht treaty. Moreover, even if the basic rules remain the same, majority voting will be further strengthened if the Community is enlarged, because more members mean more countries can be outvoted.

Somehow, the member states have got to come up with some positive answers to the problem of legitimacy. And that means finding ways to ensure that the Community meets the needs of electorates, in terms of prosperity and economic growth, and is seen to do so.

CROSSWORD

No.8,282 Set by DANTE



ACROSS

1 The English way? Ah, no – but a foreign sort (8)
5 Pin inserted into a joint (6)
10 Embarrassed after some hesitation – having got it wrong (5)
11 A portion's put out to kill vermin (3,6)
12 Time and place (9)
13 They're up for the celebration (5)
14 S. African doctor brought in by military aircraft (6)
15 Refreshed sheep tear about (7)
18 Old master of the exchange rate mechanism in turnabout (7)
20 Goes off for the booty (6)
22 A number had a row, having imbibed (5)
24 Banquet for vegetarians? (4-5)
25 I rant and rave about account (9)
26 One French boy or girl (5)
27 Former name to cause a stir (6)
28 A literary supplement? (8)

DOWN

1 Exact payment for something on another's account (6)
2 Time for a waltz? (5-4)
3 With which one has a meal with the rest (3,3,9)
4 Bird dog (7)
6 When robbers start or finish work? (8-3,4)
7 Don't use the tawse indiscriminately (5)
8 The nearest one can get to a fight (8)
9 He attacks the copper with acid (6)
16 Having made good progress we put everything up to capital (4,5)
17 It's presented at court (8)
19 Poor golfer perhaps, still gets down the hole (6)
20 Main plant producing wonder in children (7)
21 Dancing master selected pupils (6)
23 Maurice has a heart of gold (5)

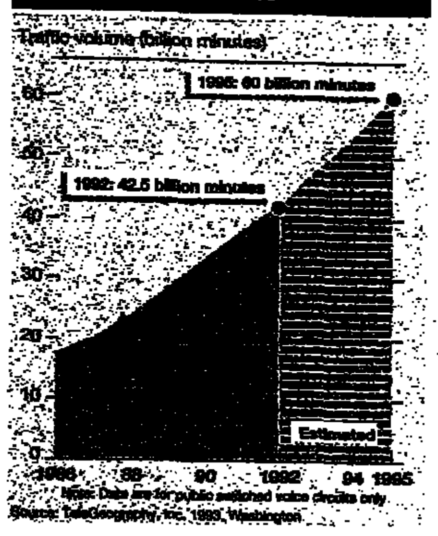
The solution to last Saturday's prize puzzle will be published with names of winners on Saturday October 30.

FINANCIAL TIMES SURVEY

INTERNATIONAL TELECOMMUNICATIONS

Monday October 18 1993

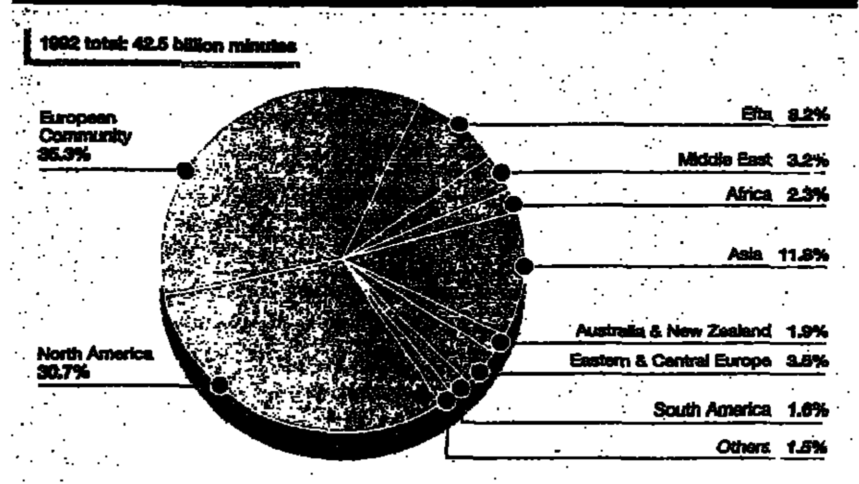
International calls



Note: Data are for public switched voice circuits only
Source: TeleGeography, Inc. 1993, Washington

The world's strongest demands for telecommunication modernisation are in Asia-Pacific regions and Latin America. China alone is aiming for 100 million new telephone lines by the year 2000, while the demand for mobile telephones is unparalleled. See report, page 10. Reuter picture

Where international telecomm traffic originates



Source: TeleGeography, Inc. 1993, Washington

Era of explosive growth

The impetus behind expansion is the international shift towards services, increased globalisation, new technology, declining costs and prices, and deregulation, reports Andrew Adonis

GROWTH, competition and privatisation are today's watchwords in the international telecommunications industry.

A few facts give the big picture:

● Last year the market for international telecoms traffic grew by around 13 per cent despite widespread recession, according to TeleGeography's 1993 survey of the industry.* That was about ten times the growth in global GDP over the year.

● Around 20 privatisations of national public telecommunications operators (PTOs) are likely to take place in the next three to four years. Taken together, the market capitalisation of the newly privatised companies is likely to be around \$150bn, according to estimates by Mr Richard Ryder, telecoms analyst at Salomon Brothers in London. Worldwide, some 46 telecommunications companies now have separate listings. By the end of the decade that number could have doubled.

● In Europe alone, according to Mr Ryder's estimates, telecommunications companies could be a larger equity sector than banks by the end of the decade. This poses unprecedented challenges and opportunities for the sector.

● Serious international competition between rival alliances of telecommunications companies is becoming a reality for the first time. In the last six months both American Telephone & Telegraph, the US giant, and British Telecommunications have formed international alliances with global pretensions. Both are bidding to become prime outsourcer to the world's multinational companies. A host of smaller alliances have sprung up, with most PTOs debating which international clubs to join.

● The eruption of mobile communications into the consumer market seems imminent. For the first time, network operators are marketing packages with wide appeal beyond the business sector. *Most analysts project a trebling of the* number of cellular subscribers by the end of the decade. If this year's growth figures are sustained, and cheap mobile phones hit the high street by the mid-1990s, that could be a conservative estimate.

Growth in international telecoms traffic is slower than in the late 1980s, when it stood at between 15 and 20 per cent a year. But it still far exceeds growth in the international economy, and is set to continue doing so for the foreseeable future.

However, it is the nature as much as the size of the recent growth which signifies. Mr Gregory Staple, editor of *TeleGeography*, notes that in the US, Japan, and the UK, the volume of international traffic added by new carriers last year was, for the first time, greater than the volume of traffic added by the main established carriers. In the US, MCI added more traffic than AT&T; Mercury outperformed BT in the UK; IDC and ITK together added more traffic than KDD in Japan.

"This suggests that head-to-head competition for international market share will be the reality for most carriers in the years ahead," he says.

"It also implies that the half dozen new international carriers which will cut their teeth in the early 1990s – in Sweden, Australia, Malaysia, Indonesia, Israel and Chile – may have a harder time than the first generation."

Competition and privatisation are proceeding hand-in-hand. This June, the European Community agreed a timetable for competition between operators for national voice traffic. All the EC's larger countries have agreed to allow new operators to compete with their PTOs by January 1998 – save for Spain, which has an extra five years grace.

The thorny question of allowing operators to build new infrastructure of their own has been deferred. But it would be extraordinary if that were not also permitted in due course.

BY 1998, it is a fair bet that most of western Europe's leading PTOs will be wholly or partially in the private sector. The remaining government stake in British Telecommunications was sold off this summer. Germany, Denmark and the Netherlands are all proceeding with sales – the last two within the next year.

The Spanish and Italian PTOs are already listed, and the disposal of more state shares is imminent. France's Balladur government has begun privatising in earnest, and telecoms is unlikely to be far down the track. Several of Europe's smaller states are thinking of privatising *their PTOs, albeit after an interval of corporate status.*

Analysts discount fears of market saturation. Mr Robert Morris, international telecoms analyst at Goldman Sachs, notes in his latest global survey that in recent years the telecoms sector has consistently outperformed world market averages.

"In every country we examined, the pace of unit growth – whether it be access line growth, calling volumes or network utilisation – outstripped the pace of real domestic GDP growth", he says.

The main reasons for the growth are the international shift towards services; increased globalisation; new technology; declining costs and prices; and deregulation.

One point is of particular note. As Mr Morris puts it: "The industry is characterised by large up-front investments with very low marginal costs, such that the unit cost of production is next to zero, contributing to attractive operating leverage and asset turnover rates."

To give an idea of what this means in practice, consider the US-UK translatlantic telecoms route. This summer a consortium of US and European operators ordered a new undersea fibre-optic system from AT&T and STC Submarine Systems, the UK-based supplier. Called Tat-12, it has *around five times the circuit capacity of* the last system built by STC, and around 12 times the capacity of the first fibre-optic undersea system (called Tat-8), which dates back only seven years.

In real terms, the price of successive undersea systems has remained constant, reducing the cost per circuit from around \$45 (Tat-8) to \$5 (Tat-12).

In the developed world, the problem is not one of generating sufficient telecoms capacity, but of finding practical and affordable uses for the huge quantity *already available* – or *soon to be so.*

Privatisation and liberalisation will introduce a host of new operators, small and large, dedicated to the task. Mr Morris views them as an internal dynamic likely to force the industry into still faster growth – "liberalisation should fuel continued privatisation efforts throughout the world and contribute to the continued growth of this industry."

However, the developed world is only one part of the picture. Most countries have minimal infrastructure and few tele

Continued on next page

● IN THIS SURVEY

Rapid erosion of monopolies

Editorial production: Michael Wiltshire

Regional contrasts remain stark

Continued from previous page: phones. Of 133 countries recently studied by the International Telecommunications Union, 70 have fewer than five exchange lines per 100 people. Sweden tops the league with a "teledensity" of 68 (i.e. 68 exchange lines per 100 people); Chad takes the bottom slot with a teledensity of 0.07. Most countries are far closer to Chad than to Sweden – including most of Asia, Latin America and eastern Europe.

Unspurprisingly, teledensity correlates closely with national wealth. Virtually all countries with annual per capita GDP of more than $7,000 have a teledensity higher than 30. Most of the world has per capita GDP of less than $2,000, and a teledensity of less than five.

The contrast is as stark within as between regions. In Asia-Pacific, Hong Kong has a teledensity of 49 and Singapore 40, whereas the Philippines languishes at 1.5 and Thailand at 2.7. Even within the European Community, Portgual (at 32) and France (at 53) are poles apart.

For most countries, then, line growth is the overriding priority. In many developing and emerging market states, the appetite for more and better basic networks will lead to a telecoms explosion in the next decade every bit as dramatic as that being forged by liberalisation, privatisation and mobile communications in the developed world. Indeed, all three will also be in evidence in developing countries, as governments look for new sources of investment and investors come to see wireless local networks as viable alternatives – not just supplements, as now – to wireline networks.


Adjustments being made on an advanced submarine 'repeater' unit which lays under the sea-bed and enhances optical phone signals

Asia-Pacific is the region set to experience fastest line growth. Mr Andrew Harrington, telecoms analyst with Salomon Brothers in Hong Kong, expects the total number of lines in the region to have doubled by the end of the decade. That means 100m new access lines, 60m of which will be in China.

Should its government provide a climate favourable to sustained investment by overseas companies, the opportunities in China are mind-boggling. The Bejing government's target is to quadruple China's network from 20m to 80m lines. That means more new lines than the existing networks of Britain and Germany put together. To make significant progress fast, Mr Harrington is convinced that China will be forced to allow direct foreign investment by overseas operators within the next year – "it will probably take the form of joint ventures in which Chinese partners retain majority stakes," he says. "But if they want to expand fast, they have got to allow in foreign equity, and a reasonable degree of management control by the overseas investors."

Back to the developed world, the growth of mobile communications will dominate industry headlines over the coming year. At a recent FT conference, Mr Seth Myrby, chief executive of Telia Mobitel, predicted that nine of ten Swedes would have a mobile phone by the end of the decade. Sweden already has the highest level of cellular penetration in the world (nine in 100 inhabitants), but that nonetheless constitutes one of the boldest of the year's claims by a senior industry executive.

Bold, but not fantastic – if you include portable phones linked to wireline connections. One by one, cellular operators in Europe and the US are announcing packages for the residential market. The incentive for them to do so comes partly from increased competition: rival cellular operators to PTOs are now licensed in most west European countries, and many beyond. It is also the conseqeunce of the building of new digital cellular networks with far greater capacity and reliability than their analogue predecessors.

Although handset prices remain prohibitive for all but the highest-income private consumers, prices are falling fast, and imaginative marketing gimmicks are making the mobile phone a plausible competitor to the fixed-line phone for the first time.

So far, the plaudits go to Mercury One-2-One, the UK network jointly owned by Cable and Wireless and US West, which launched its network last month with a special residential tariff offering free local calls in the London area in the evenings and at weekends. Rival operators have slashed their London prices, and mobile phones are now in the shops of all the main electronics retailers.

In the US, the Federal Communications Commission last month laid down ground rules for personal communications services (PCS) networks, unveiling what could eventually be a multi-billion dollar business. PCS, similar to cellular, uses digital technology and greater density of cell sites to improve reception and multiply capacity: *see report, page 8.* The FCC has decided to allow up to seven licences in each PCS market, with two for larger carriers and five for smaller ones. A significant expansion of US cellular competition is in the offing.

For the leading operators, a delicate balance has to be struck between securing one's position in the home market and staking out claims abroad. The recent activities of AT&T and BT, the most aggressive international operators, are a telling commentary. In June, BT hailed its $5.3bn alliance with MCI, the US carrier, as the telecoms deal of the century. The deal involved BT taking a 20 per cent stake in MCI, the second largest US long-distance carrier, and the formation of a $1bn joint venture company with MCI to stake out claims in the international market.

This summer AT&T set up an international outsourcing venture of its own, called Worldsource. But not to be outdone in the investment league, in August it spent more than $12bn buying McCaw, one of the largest US cellular companies, to reinforce its position at home.

Talk to the executives of both companies, and the word "multimedia" is more likely to come up than "telephone." Services spanning the telecoms/computing/entertainment divides are already on offer; the prospect of new multimedia offerings causes more excitement than any other subject in today's telecoms industry. Later articles in the survey explain why and how.

* *TeleGeography 1993, TeleGeography Inc., Suite 1000, 1150 Connecticut Ave, N.W., Washington DC 20036, USA. $575/£375.*


Telecom landmark engineers carry out maintenance work at the Goonhilly communications station in Cornwall

■ PRIVATISATION IN EUROPE

Monopolies are being quickly eroded

Public perception often lags behind concrete reality – and telecommunications is no exception, reports Andrew Adonis

ACROSS western Europe, the general perception is that telecommunications are monopoly, state-run utilities. In reality, their monopolies are being fast eroded, and governments are rapidly disengaging themselves not only from the management, but also the ownership, of public telecommunications operators (PTOs).

A decade ago, most of western Europe's PTOs were effectively government departments. Their policy was determined by the state; their finances were to all intents and purposes part of the state budget; decisions about tariffs and investment were taken by ministers; and the PTOs were generally grouped together with postal services to make a single state communications utility.

No longer. With a few exceptions, PTOs have been separated from postal services. Most PTOs have also been given corporate status, turning them into free-standing companies with one shareholder, the state. Although their boards are appointed by ministers, who also determine overall policy, operational independence is the norm.

There is no intrinsic reason why corporate status should not be a settled state. However, for most PTOs it is turning out to be a temporary staging post to full privatisation. In many cases it was always intended to be that way; but even where that was not the intention, pressures from overburdened state budgets and the liberalising international telecoms market have forced the pace.

Within a year or two, only Austria, Norway, Luxembourg and Switzerland are likely still to have old-style state-run PTOs.

The PTOs of Belgium, Finland, France, Ireland and Sweden are corporations, or soon will be. The first four all appear set to take further steps towards privatisation in the near future:

- Belgacom, the Belgian PTO, recently formed a 75:25 joint venture with Pacific Telesis, the US regional operator, to operate its new GSM cellular service. The step is widely seen as a trial run for privatisation of the company as a whole, although a strategic alliance with another US operator is thought to be unlikely.
- Telecom Finland is about to become a corporation, and from next January faces strong competition for voice traffic in its home market from a new consortium of regional operators.
- Telecom France did not feature in the first batch of state companies to be privatised by the centre-right Balladur government. But it is likely to appear on a future list.
- Telecom Eireann, the Irish PTO, is engaged in talks with Cable and Wireless, the UK group, about a possible alliance. Although the Irish government insists that privatisation is "not on the agenda," few Irish observers believe an alliance without a formal stake for the strategic partner will be Telecom Eireann's final destination.

The rest of western Europe's PTOs are still further down the privatisation track. With the sale of the last tranche of government shares this summer, British Telecommunications is now entirely private owned.

OTE, the Greek state operator, appeared to be the next in the queue, under a scheme voted through the Greek parliament earlier this summer to give a 35 per cent stake to a strategic partner with management control, with another 14 per cent to be floated on the Greek stock exchange early next year. However, the recent return of the Greek socialists, under Mr Andreas Papandreou, is likely to scupper the sale. The socialists are pledged to keep OTE in the state sector, though in what form remains to be seen.

There will be at least three significant flotations in the next two years:

- Deutsche Telecom, the German PTO, will be the largest.

The forthcoming privatisation of Deutsche Telecom – Germany's public telecom operator – will be unusually complex

Constitutional amendments to enable the privatisation to go ahead are about to be introduced into the German Parliament, with a first stake in the company set for flotation in 1996. Germany's will be an unusually complex privatisation, partly because of the delicate legal status of Deutsche Telecom and its employees, and partly because of the exigencies of a cross-party agreement with the opposition Social Democrats necessary to get the required parliamentary majority for the privatisation legislation.

- KPN, the Dutch posts and telecoms operator, is to be privatised in two stages over the next three years. The government has indicated that it intends to retain only about 30 per cent of the shares after the second sale.
- A minority stake in Tele Danmark, the Danish Operator, will be sold early next year. TD is already a publicly-quoted company, and earlier disposals have reduced the state's holding to 89 per cent.

Those four are unlikely to be the only offerings on the horizon. Some of the corporations might reach the market in the same time-span. The Turkish government appears to have reached tentative agreement on a partial sale of PTT Turkey. Part or all of the PTOs of Spain, Italy and Portugal are already publicly listed companies, and a reduction in the government-owned stake is likely in all three.

In Portugal and Italy, it will go hand-in-hand with a significant re-organisation of the industry. The operating subsidiaries of Stet, the Italian telecoms holding company, are to be brought together into a single company, provisionally named Telecom Italia. The three-company Portuguese industry is to be similarly rationalised.

No privatisation blueprint exists. Although the PTOs are engaged in a common business, and many of them have comparable debt and investment profiles, each PTO has its own problems and peculiarities. Nonetheless, two models are emerging. For small PTOs, the favoured option is to sell a stake of about a third to an established international operator, in return for management expertise, investment and marketing resources. A further, though smaller stake can then be floated on the domestic stock exchange, leaving the state with a 51 per cent stake at the outset.

For larger PTOs, a conventional flotation is the most likely course. This need not – and in most cases will not – preclude formal alliances with other international operators.

A host of issues have to be resolved on a case-by-case basis – valuation, regulation, reserve government powers and guarantees of employee rights being only the most vexatious. Needless to say, consultancies and merchant banks are salivating at the prospect.

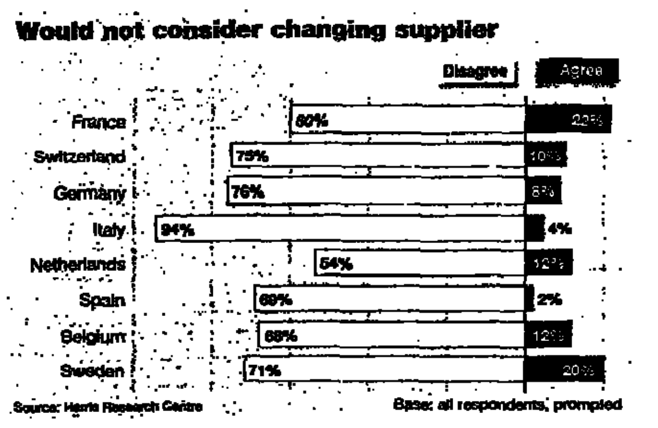
EUROPEAN COUNTRY STATISTICS

COUNTRY	Population in millions	Access lines (m)*	CAGR, 1986 to 1991, %	Lines per 100 popn.	Mobile subs. ('000s)	CAGR, 1986 to 1991, %	Intern'l. outgoing traffic*
Belgium	9.84	4.10	4.6	41.6	51.4	68.4	823
Denmark	5.15	2.97	2.6	57.7	175.9	25.0	404
France	57.05	29.10	4.0	51.0	290.0	100.0	2,182
Germany	80.33	33.4	3.5	41.6	532.5	117.5	3,557
Greece	10.06	4.19	5.4	41.7	14.3	n/a	248
Ireland	3.52	1.05	6.7	29.8	32.0	84.4	83
Italy	57.05	23.07	5.1	40.4	568.0	128.9	1,341
Netherlands	15.13	7.18	2.9	47.5	115.0	49.7	1,017
Portugal	9.85	2.69	9.2	27.3	12.6	n/a	139
Spain	39.02	13.79	5.4	35.3	108.5	127.0	719
Turkey	57.3	8.15	15.9	14.3	47.8	165.1	198
United Kingdom	57.37	25.60	3.1	44.6	130.0	56.7	2,700

* International outgoing traffic is measured in millions of minutes; CAGR is the compound annual growth rate; access lines are in millions. The figures here are for 1991.

Sources: Lehman Brothers/ International Telecommunications Union.

There are bold plans to upgrade eastern Germany's telecoms: above: phone boxes in central Berlin Tony Andrews



Business support for telecoms liberalisation: in a survey of the European business community on attitudes towards liberalisation, 70 per cent of senior decision-makers said that they were prepared to change telecommunications suppliers. The greater resistance to change came from France (22 per cent) and Sweden (20 per cent). Italy is the most supportive of change – 94 per cent stated they would consider changing suppliers. The survey, on behalf of BT, was carried out this year by the Harris Research Centre.

Seamless cellular system across Europe: using a subscriber identity module (SIM card) this French caller phones home on a Motorola digital cellular phone via the GSM (Groupe Speciale Mobile) network

■ IMPACT OF LIBERALISATION

A triumph for the EC's liberal conscience

Europe's business community seems to take a simple view about telecom services: the more competition, the faster, the better, reports **Andrew Adonis**

FOR EUROPE'S *telecommunications industry*, the red-letter day of the decade is January 1, 1998. That is the deadline agreed by the European Community for exposing existing voice telephony operators to competition in their home markets.

From one perspective, agreement on the 1998 deadline was a triumph for the European Community's liberal conscience, championed in this *instance by Britain*, the Netherlands and the European Commission's own telecommunications directorate.

Mr Michel Carpentier, head of the directorate since 1983, is wont to remind visitors that is only two years since France, Spain and Italy were mounting legal challenges in the European Court of Justice to Commission's powers to liberalise the markets for telecoms equipment and specialised services.

In practice, however, telecoms competition is an idea whose time has come, and the question facing the EC ministers in June was when and how, not whether.

Indeed, the competition is already there. Although most of the EC's Public Telephone Operators (PTOs) formally retain their domestic fixed-line monopolies, the monopoly is being eroded by the month.

Almost all EC countries now have competing cellular mobile services. Whereas the first generation of analogue cellular services were mostly provided by PTOs as monopolies, in most EC states licences for new digital services built to the pan-European GSM standard have been given to two operators, generally the PTO and one private consortium, the latter often including overseas companies.

In Germany, three digital networks are coming on stream: Deutsche Telekom has only one, and that is now operated a free-standing subsidiary of the parent company.

The Commission has undertaken to publish, by January 1995, a paper on mobile and personal communications. However, the most important decisions have been taken, and a liberalised European market is already in existence.

It is the same story in data services, where liberalisation is advancing by stealth. Even in the "voice" market, call-back and other business arrangements are eroding *de facto* monopolies.

They are also forcing PTOs to bring prices for long-distance and international calls down towards cost, so undermining – for PTOs and governments alike – the political and financial advantages of preserving the state telecoms monopoly.

However, all is not as straightforward as it might seem: 1998 is only one stage in the liberalisation process, and the EC's June 16 accord raised as many questions as it answered.

The 1998 deadline applies only to eight countries; Spain, Ireland, Greece and Portugal, judged to have "less developed networks", have been granted an extra five years' grace. Separately, "very small networks" will have two years extra "where justified."

Then there is the question of licensing new entrants. Post-Maastricht, an EC version of the Federal Communications Commission is out of the question; regulation will come from national agencies, with an initial steers and periodic prods thereafter from Brussels. There will nonetheless need to be co-ordination of policies on the licensing of new entrants, particularly the larger US operators whose ambitions send shivers down many the spines of many PTO directors.

Are licences issued in one country to be recognised automatically in others?

If not, why not?

These questions, hypothetical at the moment, will be only too pressing should the UK government grant AT&T a PTO licence in the next year.

THE June 16 accord con*tains but one sentence* on the subject: "The opening of the Community telecommunications market for third countries should be linked to comparable access to such countries' markets."

Another critical, but unresolved, issue is that of infrastructure. The June accord envisages competition between operators over the public network. It deliberately sidestepped the vexed question of whether operators should be able to build *new* networks – either to operate themselves, or to lease out to others.

The EC will publish a Green Paper on infrastructure by January 1995. It will also look at the future of cable TV networks – *which is integrally* linked with infrastructure, since cable companies offering combined TV and telephony services is one way of securing competing fixed-wire telecommunications networks quickly.

The infrastructure debate looks to be going the same way as the "voice" debate: by the time the EC decides a policy, liberalisation will be all but inevitable. The UK has already liberalised.

The Netherlands government is considering a plan to licence its railways, cable companies and utilities to provide a national network to compete against its PTO, which is to be privatised next year.

Finland – outside the EC, but a telecoms pace-setter – has licensed a second national network, comprising existing regional operators.

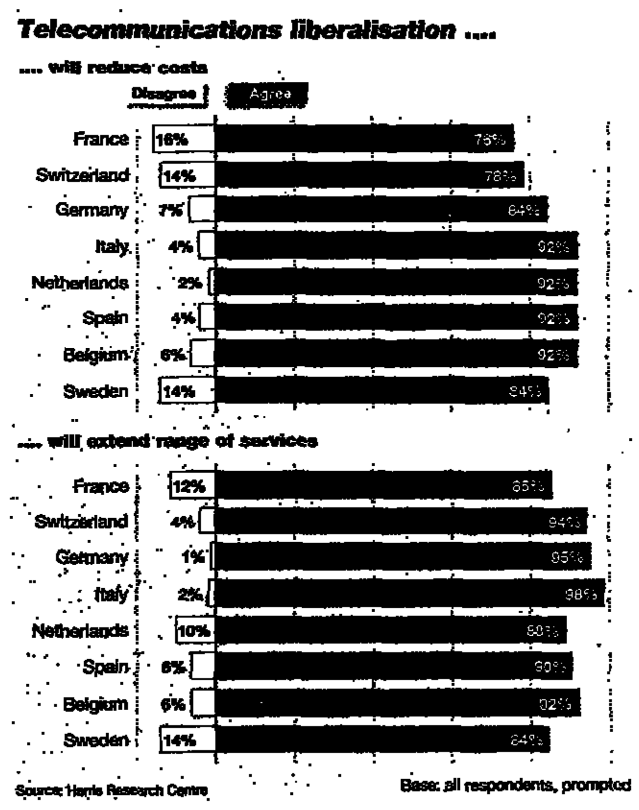
There are already indications from Germany that infrastructure will be liberalised at the same time as voice services. If it makes an early announcement to that effect, the EC will be no more than a rubber stamp.

However complex the negoti*ations and processes, Europe's* business community seems to take a simple view: the more competition, the faster, the better.

A survey of 500 senior executives across Europe, carried out over the summer by the Harris Research Centre on behalf of BT, found 60 per cent saying that telecoms was the industry they most wanted to see liberalised.

Almost three-quarters would *consider changing their supplier*, while 79 per cent did not agree that doing so would be an "unnecessary risk" to their business. The greatest resistance to change came from French and Swedish executives, only a fifth of whom would consider changing operator.

By contrast, 94 per cent of Italians said they were ready to switch. And virtually everyone – including 85 per cent of the French – *thought that liberalisation* would improve the range of services on offer.



■ GERMAN PRIVATISATION PLANS

Beset by political wrangles

Deutsche Telekom's ability to invest abroad is hampered by its strained financial situation, reports Ariane Genillard in Bonn

FOR two years, German political parties have been haggling about Deutsche Telekom, the greatest plum in the slow-moving German privatisation process.

So far, all that has emerged is a four-page document which is expected to be submitted to parliament this autumn.

Inter-party agreement is essential, in order to secure the special parliamentary majority required to amend the German constitution, which defines telecoms as the responsibility of the federal state.

The opposition Social Democrats (SPD) were not enamoured of the initial plan put forward by Chancellor Helmut Kohl's coalition; to win them over, the government has had to agree an awkward, vaguely-worded compromise.

The government's objectives are clear – and echo the pleas of Deutsche Telekom itself. First, the operator urgently needs private-sector funding to see through its heavy investment in eastern Germany.

Second, privatisation is essential to reduce the operator's public administration fat, to enable it to compete successfully in the liberalising European telecoms market.

Since reunification, Deutsche Telekom, which has a turnover of DM54bn, has been been charged by the government with upgrading the entire basic telephone network for eastern Germany's 7.2m phone users. The company also plans to install 5m cables for television connections, lines for 400,000 faxes and 70,000 public telephones. In total, it has committed DM60bn worth of investments in the east by 1997. Its debt, which stands at DM100bn, is expected to rise to DM140bn by 1995.

"We need DM20bn to DM30bn of new equity if we want to continue out investments in the east," Mr Helmut Ricke, Deutsche Telekom's forceful chief executive, says bluntly. Mr Ricke, who has openly campaigned for privatisation for two years, stresses the restrictions imposed by the state of the German budget.

"When we go to the finance ministry for funds, they tell us they have the same problem," he says.

Mr Ricke is further concerned that the company's ambitions to expand are limited by its public administration status which legally forces it to cover the deficits of the German post and postal bank. Last year, Deutsche Telekom had to hand over DM1.5bn to the two loss-making enterprises out of its annual DM6.45 annual profits. It is also forced by law to hand over 10 per cent of its revenues to the state budget each year.

The company's sales rose by 14.3 per cent in 1992, due mostly to eastern Germany. However, it argues it should no longer have to transfer a fixed percentage out of its gross revenues, pointing to its declining profits which fell in 1992 by 10.4 per cent from DM7bn the previous year.

Its bands tied at home, Deutsche Telekom is worried about it ability to be a global telecoms player. The company has been anxiously watching the progress of its private competitors in Britain and the US.

"There is a simple formula," says Mr Ricke. "When the world changes in the right direction, and I believe private companies can offer better services to their clients, one must follow it."

But Deutsche Telekom's ability to invest abroad is hampered by its strained financial situation in Germany, he adds. Referring to large joint-ventures between competitors, Mr Ricke says: "Even if we had wanted to do such a thing, we would not have the means to do it."

Much depends on the attitude of hard-line Social Democrats

As for the government, it is eager to remove the cost of rebuilding infrastructure in the east from the Treasury. And the proceeds from the privatisation, which will be partly used to repay for the prior recapitalisation of the company, could help fill a few gaps in the finances of the federal government itself.

However, the path to privatisation is tortuous because of objections voiced by the Social Democrats, who are opposed to the establishment of a private company not subject to state control. Mr Peter Paterna, one of party's leading opponents of "classical" privatisation, argues that a private Deutsche Telekom will betray the much-vaunted German concept of the *Bürger Post* – the idea of post and telecoms as a utility for all citizens. SPD opposition to privatisation is strengthened by its close links with the 600,000 Post Trade Union, which embraces the telecoms industry. The union is fighting to preserve the employment status of its members, who as civil servants enjoy special rights such as life employment and generous pensions.

While civil servants cannot by law be fired, a partly private Deutsche Telekom could implement incentive compensation schemes to discourage poorly performing employees.

Early retirement programmes for civil servants could also figure in the company's restructuring programme, which plans to eliminate up to 30,000 jobs in the next fews years from its current 230,000 employees.

Compelled to compromise with such demands, the government's four-page document proposes to turn Deutsche Telekom and the post bank into three separate joint stock companies, with a holding company overseeing them.

In the case of Deutsche Telekom, the government will retain a 51 per cent stake until monopolies are removed in Europe. It is expected to reduce its stake to a minority share thereafter. The holding company will have "supervisory and co-ordinating" powers over the joint-stock companies. These powers could extent to "duties concerning the infrastructure," a response to the SPD's demand that remote regions are not treated less favourably than urban centres.

Moreover, its specifies that wage agreements will be decided at the holding company level, thus allowing the trade union to retain greater wage bargaining power than if wages were decided in the three separate enterprises.

These clauses have raised concern about the future ability of Deutsche Telekom to act unhindered from state control.

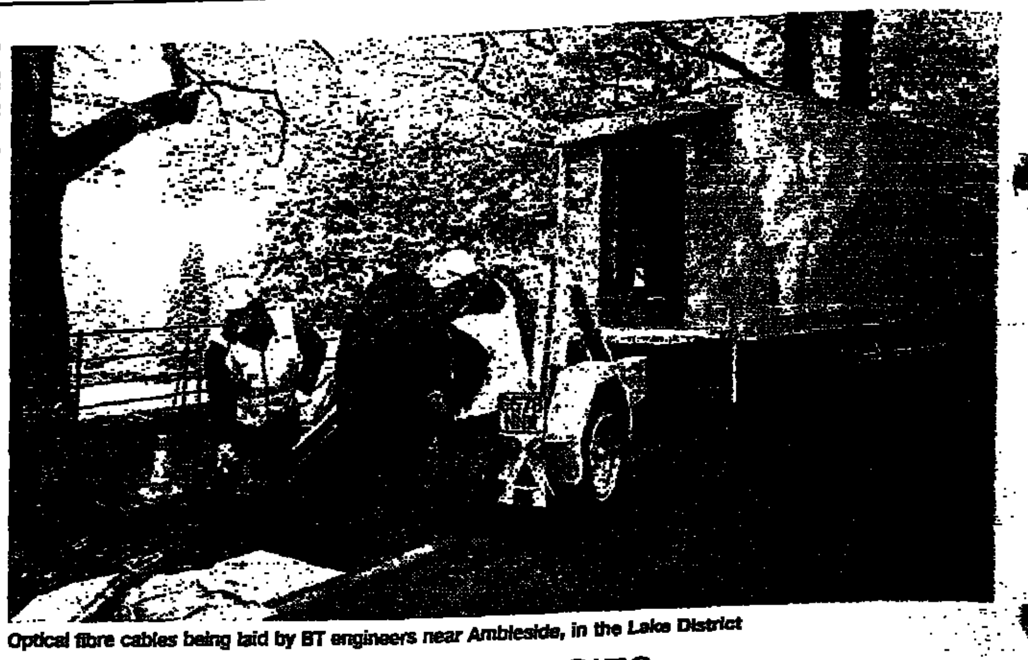
"I am not sure how a law could encompass all the contradictions in this document," complains Mr Frerich Görts, former state secretary at the post and telecoms ministry and charged with writing the bill this summer. "I cannot turn black into white".

But the government is determined to oversee the contradictions in the document and draft the bill. It is counting on that resistance within the SPD to privatisation is fading in the wake of the decision by the European Community to pry open monopolies and liberalise telecoms in Europe by 1998.

For liberalisation has opened the prospect that Deutsche Telekom could lose out in the telecoms competitive battles. Already, Mannesmann, the German engineering group and Deutsche Telekom's newly-arrived competitor in the cellular mobile field, has gained a 50 per cent market share on a digital network installed last year in the country.

Much will depend the attitude of hard-line Social Democrats in parliament this winter. The retirement at the end of the year of Mr Emil Block, the vice president of the post trade union and flag-bearer of the hard-liners, could herald a further softening in the opposition's stance.

If the bill goes through quickly, the company is hoping for a first tranche of its shares to be floated by 1996. The issue could be worth Dm15bn, according to Mr Ricke and independent analysts. If parliament rejects the bill, such a move could be delayed by a couple of years.



Optical fibre cables being laid by BT engineers near Ambleside, in the Lake District

■ UK POLICIES

Imitations abound

Britain is one of the world's foremost telecommunications 'laboratories,' reports Andrew Adonis

THE UK's policies on competition and privatisation in telecommunications are being imitated worldwide, while the fate of new services – particularly the growing price war in the country's cellular mobile industry – are of global significance.

It is nearly a decade since the privatisation of British Telecommunications and the licensing of Mercury Communications, a subsidiary of Cable & Wireless, as a national competitor. C&W, itself privatised only three years previously, was an established operator in the territories of the former British empire, but had previously done little in the UK.

Competition got off to a limp start. Using railway lines for the most part, Mercury's network construction proceeded slowly. It made no early bid for the consumer market. Although it rapidly gained a sizeable business clientele – more than half of the City of London's outgoing traffic is now carried by Mercury – concerns about reliability and range of service restricted growth.

At home, BT is still a Goliath. It carries around 90 per cent of the UK's telecoms traffic. With the third and final tranche of government shares in BT sold this summer, the only government check on its activities comes from Oftel, the UK's telecommunications regulator. Over the past decade Oftel has contained BT's prices but left it with fat profits, which it is now using to establish itself as a giant abroad – most recently through a $5.3bn deal giving it 20 per cent of MCI, the second largest US operator, and the lion's share of a joint venture set up by the two companies.

However, BT's home base may soon be under siege. Mercury is making a determined bid for the domestic market: as yet it has only 375,000 domestic subscribers (against BT's 20m-plus), but with improved access terms, and new packages enabling people to subscribe without purchasing a special phone, it is growing rapidly. And Mercury is not the only challenger. Two years ago the government ended the BT/Mercury duopoly established in 1984, and guaranteed for the medium term by ministerial assurances given at BT's privatisation. Instead, the government announced its readiness to license new public operators, either building their own networks or retailing services provided over existing networks.

Furthermore, it allowed cable companies, with franchises in urban areas, to build combined TV and telephony networks – and to encourage them to do so, it banned BT from offering entertainment services over its existing network for at least ten years.

BT deeply resents the ban, and is planning a video-on-demand service to test its extent. But it appears to have had the desired effect: 27 companies, 20 of them North American, are currently building combined TV/telephone networks in 62 conurbations, with licences for another 65. They already have 135,000 customers between them, more than treble the tally a year ago.

BT still carries around 90 per cent of the UK's telecom traffic

As for public telecommunications licences, 22 have been granted in the past two years. Most of them are for providers of specialised or regional services, including several overseas companies. But two companies have licences to build national networks: Energis, a subsidiary of the National Grid, the company which operates the national network of high-voltage pylons, is erecting an optical-fibre network on the pylons in barely two years; while Ionica, a private company, is building a radio network.

Faced with new competition from all sides, BT's market share is bound to suffer. The key question is whether between them BT and the new operators can grow the market sufficiently to reduce BT's dominance while increasing its turnover and profits.

The same question is hanging over the UK's cellular mobile industry, where Vodafone, the world's largest independent cellular operator, and Cellnet, a joint venture between BT and Securicor, are facing pressure on prices for the first time since the launch of their networks in the 1980s.

By developed world standards, the UK's take-up of cellular phones is unexceptional, with a take-up rate lower than the US and Scandinavia but higher than most of the EC. Nor is the UK much of a technology testing ground: the GSM standard (adopted for two of its new digital services) is pan-European, while the PCN standard (adopted for the other two) has also been adopted by Germany and looks sets to extend elsewhere.

However, the competitive pressures emerging in the UK cellular industry, while still some way short of those in Hong Kong, are more than a match for most of the rest of the world.

Until this year, Vodafone and Cellnet carved up the market between them, making profits equal to more than 40 per cent of sales. The launch last month of Mercury One-2-One, the first of two licensed PCN networks, looks set to end that once and for all.

One-2-One astonished the industry by offering free local calls to domestic subscribers in the evenings and at weekends, in a determined bid to put mobile phones on the consumer map for the first time. That came on top of a tariff structure which offered substantial discounts on Vodafone and Cellnet tariffs – albeit limited by the fact that One-2-One's network currently covers only the London area.

Despite the marketing hype, for the moment One-2-One will have only a modest appeal to domestic consumers because of the cost of handsets (at least £250) and monthly subscriptions (between £12.50 and £20). But One-2-One has already forced Vodafone and Cellnet to reduce their peak-rate London tariffs by 40 per cent, and to cut low-user tariffs aimed at the domestic market.

With Hutchison set to launch another PCN service next spring, and Cellnet due to launch its digital service at the same time, competition will soon be taken to a still higher plane. That, plus the expected fall in digital handset prices, places the mass consumer market perhaps only two or three years away.

Given the intensity of competition, it could come sooner in the UK than in most of continental Europe. However, the cellular sector highlights a remarkable paradox in the UK's telecom industry. Its service sector is thriving, but its manufacturing base is non-existent.

All its suppliers are overseas companies. The wire-line sector is going the same way, with GPT now the only sizeable indiginous supplier – and GEC, its parent, has sold half of that to Siemens, with the other half generally expected to follow in due course.

The British disease – all services, no manufacturing – or a tragic missed opportunity? Either way, the die is cast.

■ Privatisation and liberalisation outside Europe

Rapid advances worldwide

In Latin America, telecoms privatisation is advancing at a speed that makes Europe's progress appear positively glacial, reports Andrew Adonis

BEYOND Europe, privatisation and liberalisation are advancing wordwide in the telecommunications industry. But they have many faces, and an array of contrasting approaches are to be found.

The US *(covered in separate articles on page 8 of this survey)* is a world unto itself, with its unique history of telecoms development and its distinctive regulatory structure.

Since many of the strategic partners and inward investors shaping the industry in other regions are US companies, particularly the regional Bell operators, US practices are making themselves felt worldwide. This is particularly true of the US propensity to test regulatory barriers and licence conditions in the courts. But nowhere has it led to a private operator régime as complex or confrontational as in the US.

Investors are targetting the dynamic regions of Latin America and the Asia-Pacific countries

Elsewhere, the most dynamic regions are Latin America and Asia-Pacific, with China looming on the horizon and likely to dominate investment priorities in the industry if its government proceeds with further telecoms liberalisation – *see Asia reports on page 10 of this survey.*

In Latin America, privatisation is advancing at a speed that makes Europe's progress appear positively glacial. Most of the region's leading operating companies have been privatised, or soon will be.

In Europe, state budget deficits are a prime factor in privatisations. In Latin America, governments also want the cash; but privatisation has also been treated as a prime vehicle for attracting strategic partners to take the lead in building new lines and modsernising infrastructure as fast as possible.

In the last few years, Argentina, Mexico, Chile and Venezuela have all sold majority shares in their national telephone companies while Brazil, Uruguay, and Costa Rica have privatisation programmes in the offing.

In all cases, modernisation was – and is – a more important concern than competition; but pressure to liberalise is growing nonetheless.

Telmex, the inefficient Mexican state operator, was privatised as a monopoly in 1991. According to Goldman Sachs, its licence binds it to achieving average annual line growth of 12 per cent until 1995, and six per cent a year from then to 2000. Barely 8 in 100 Mexicans haver a line at the moment. From 1997 Telmex will face competition in the long-distance market.

CTC, Chile's national operator, has Telefónica, Spain's national operator, as a strategic partner with a 44 per cent stake. Line growth in Chile is expected to be a remarkable 23 per cent this year; long-distance traffic has grown by 25 per cent a year since 1988. By the end of this year, CTC will have an all-digital network.

In Argentina, two privatised operators, both with foreign partners, divide the country between them. Stakeholders in Telecom Argentina, which has the north of the country, include STET of Italy, France Cables and J P Morgan, the investment Bank; Telefónica de Argentina is 60 per cent owned by a consortium which includes Citicorp, the US bank, Banco Central and Telefónica of Spain.

Venezuela's national operator, CANTV, was sold last year; 72 of the $1.89bn raised came from international companies participating in the consortium that bought a controlling interest in the company. Spain's Telefónica features yet again.

In Brazil, a political debate is raging over whether to abolish the state's constitutionally-guaranteed telecoms monopoly over telecoms operation, seen as an essential first step towards privatisation. Telebras, Brazil's state-owned telecommunications holding company, has become the leading light on the Sao Paulo stock exchange, thanks to foreign investors anticipating opportunities to come.

Peru joins the privatisation league in December, when the country's two state operators are to be sold off. Peru has one of the worst networks in Latin American, with barely 2 lines per hundred people. If the sales go as planned, the buyers will be obliged to invest $1bn to expand the network overthe next five years. The monopoly will be left intact for five years, on condition that the winning bidder doubles the number of lines in that period.

Unsurprisingly, Telefònica is an interested party in Peru, along with AT&T, GTE and South-Western Bell of the US, the UK's Cable and Wireless, France Telecom, STET of Italy and Korea Telecom. They are likely to form bidding consortia with established equipment suppliers, such as Siemens, By contrast, Asia-Pacific offers a more varied picture, with countries positioned across a wide spectrum of development.

However, in marked contrast to Latin America, the strategic investor model has to date found little favour anywhere in the region.

For the region's more developed countries, privatisation and liberalisation are primarily intended to give a greater impetus to developing already advanced networks.

Mr Andrew Harrington, telecoms analyst with Salomon Brothers in Hong Kong, expects telecoms companies with a total market capitalisation of $70bn to be put up for sale in the region by the year 2000. Of that, around $20bn will be available for investors.

"In 1990, there were only four companies you could buy: two in Japan, Hong Telecom, and Philipines," says Mr Harrington. "Now there are in excess of 20, and the number will burgeon in the next decade."

Singapore Telecom is the privatisation nearest on the horizon. The country already has one of the most sophisticated telephone networks in the world: it is looking to private investors largely to give it still greater dynamism and international clout. State operators in Korea, Australia, Thailand, Indonesia and India are all candidates to follow on – though in some cases (notably Australia), governments are publicly denying the prospect.

In the region's developed countries, liberalisation is proceeding fast. In Hong Kong, local services are to be liberalised from 1995. Japan, which permitted competition as long ago as 1986, now has three long distance carriers competing with NTT, two international carriers competing with KDD, and four new cellular operators.

In Australia, Optus, the competitor to state-owned Telstra, benefits from a favourable regulatory régime and is expected to have a 25 per cent market share within five years. Even tiny New Zealand, which three years ago its state carrier entire to a consortium led by Bell Atlantic and Ameritech of the US, now has one competing long-distance operator and two new cellular operators likely to set up in the next year.

For developing countries in the region, foreign investment is geared primarily to building new lines. In most cases, monopolies have been preserved, with overseas investors encouraged to contract to build lines as a partner of the state operator, using "build, operate, transfer" (BOT) arrangements.

In developing countries, foreign investment is geared primarily to setting-up new lines

In a few cases, notably the Philippines, a liberal régime has been created for the job.

Thailand is the most significant BOT market. Japan's NTT has a stake in Thai Telephone and Telecom, a private company with a BOT contract to build 1m lines in the provinces. TelecomAsia, a consortium in which Nynex, the US operator, has a 15 per cent stake, is contracted to build 2m lines in the region.

"This could be the model for many future ventures," says Mr Arthur Troy of Nynex, TelecomAsia's chief operating officer. "For us, it's a novel form of operation, but seems to be working well."

India is sharing in the novelty. This summer its government granted US West a $100m contract to build a telephone network in a south Indian town, in a move widely seen as the first nail in the coffin of the state's telecoms monopoly.

In the Philippines, four predominantly overseas consortia are constructing networks – which they will own as well as operate. Between them they will install some 3m new lines – in a country which currently has only 900,000 lines. Three new cellular networks are also under construction.

The BOT model has obvious attractions for other developing regions, notably Africa. Kenya, Nigeria and the Sudan are all considering telecoms privatisation programmes, under the tutelage of the World Bank. By they time they get there, state-owned national telecoms operators may be as old-fashioned as much of their telephone networks.

US developments: page 8.
Asia-Pacific region: page 10.

The telecom traffic base of the top 20 international carriers

Rank and Carrier	1992 outgoing MITT in millions	1991 outgoing MITT in millions	Per cent growth, MITT 1991-92	Country
1. AT&T	6984	6557	6.5	United States
2. DBP Telekom*	4087	3557	15.3	Germany
3. France Telecom	2449	2295	6.7	France
4. BT	2188	2105	3.9	United Kingdom
5. MCI*	2083	1600	30.2	United States
6. Swiss PTT	1551	1429	8.5	Switzerland
7. Stentor*	1520	1425	6.7	Canada
8. Hong Kong Telecom	1137	913	24.5	Hong Kong
9. Netherlands PTT*	1134	1018	11.4	Netherlands
10. Iritel*	1116	980	13.9	Italy
11. Sprint*	940	723	30.0	United States
12. Belgacom	911	823	10.7	Belgium
13. KDD	900	850	5.9	Japan
14. Telefonica	804	719	11.8	Spain
15. Teleglobe*	722	647	11.6	Canada
16. Austrian PTT	713	642	11.1	Austria
17. Telia AB*	691	672	3.5	Sweden
18. Telmex	684	500	36.8	Mexico
19. Mercury	661	493	34.1	United Kingdom
20. Telstra	659	610	8.0	Australia

MITT is the minutes of telecoms traffic. Data are for public voice circuits only, rounded to the nearest million MITT. * Indicates data for North American carriers include continental traffic. Stentor was formerly Telecom Canada; Stentor traffic is for US and Mexico only of which around 70 per cent was originated by Bell Canada. For Italy, Iritel (formerly ASST) handles intra-continental traffic only. Italcable carries overseas traffic. For DBP Telekom, 1992 data includes outgoing traffic from the former East Germany. For Netherlands PTT, 1992 data is for financial rather than physical traffic. Telia AB was formerly Televerket.

Note: BT, KDD, Hong Kong Telecom and Mercury data are for the fiscal year (April 1992 to March 1993).
Source: TeleGeography Inc., Washington, 1993.

In the Far East, privatisation gives greater impetus to developing already advanced networks — Reuter

■ EASTERN EUROPE

Starting from scratch

The success of mobile communications supports the 'leapfrog' theory that eastern Europe can skip generations of development and leap to the latest technology, reports Nicholas Denton in Budapest

BUDAPEST, circa 1990. The lead character of the film hears his wife has given birth, rushes to a callbox and telephones the hospital. Wrong number: cut to seductive girl at the other end of the line. Telephones – erratic ones – are a staple of east European drama.

Not for much longer. State-of-the-art French card phones, some with tone-dialling, are proliferating across Hungary's capital and taking the romance out of telecommunications.

Modernisation is long overdue. Communist regimes, suspicious of free communication and keen on more tangible economic output, bequeathed creakingly inadequate telephone systems to their democratic successors.

East European countries average 10-20 lines per 100 inhabitants compared with about 40 in western Europe. Some exchanges date back to the 1930s. Visiting western engineers with a yen for telephone history beg for a glimpse of the Jozsefvaros rotary switch in Budapest.

Economic liberalisation has put the telephone systems of the region – never very sturdy – under even more strain. The foreign investors, private entrepreneurs and foreign traders of the new market economy are chatterboxes. The sheer volume of calls regularly overburdens telephone systems across the region. One day this spring, telephones crashed across parts of Prague and physical meetings came back into their own.

Each individual's inconvenience adds up to a heavy overall economic burden. A survey by the Organisation for Economic Co-operation and Development (OECD) of east European companies showed that substandard telecommunications was eastern Europe's most serious infrastructure obstacle to exports.

Rickety telephones have burdened, and deterred, foreign investors, too. General Electric of the US blamed part of the 1992 loss at its Tungsram lighting venture to the cost of establishing microwave links to its plant in Nagykanizsa in western Hungary.

Russia: callers using public phone boxes in Moscow Picture: Tony Andrews

For all the grumbling about telephones – without which many a social occasion in the region would be incomplete – development has begun.

Most countries in eastern Europe have – or are constructing – new international switches, which enjoy a very rapid payback. The region's telephone utilities are also installing new digital switches and fibre-optic cable to create an overlay network for businesses, and to reduce the strain on existing analogue services. Business users prepared to pay a premium can now acquire a line of international quality in Prague, Budapest and several other cities.

In this first phase, western manufacturers like Siemens, LM Ericsson, Northern Telecom, Alcatel and AT&T have moved in to supply equipment. Some have been also been drawn into privatisations and joint ventures in order to win contracts.

Nowhere is the link clearer than in Poland. The authorities and their advisers Bain & Co parcelled up the telecommunications equipment sector into three parts for sale. Acquirers have preferential access to the Polish market and the policy has induced AT&T, Alcatel and – just last month – Siemens to invest.

Investment, and western firms, have also focussed on mobile communications. Hungary's recent tender for two concessions to operate GSM digital mobile networks raised nearly $100m in fees and promises another $400m in spending on network development over 10 years.

US West, the regional Bell operating company, partnered national operator Matav to gain one of two concessions. Pannon GSM, a consortium teaming national operators from the Netherlands, Denmark, Sweden and Finland, took the second.

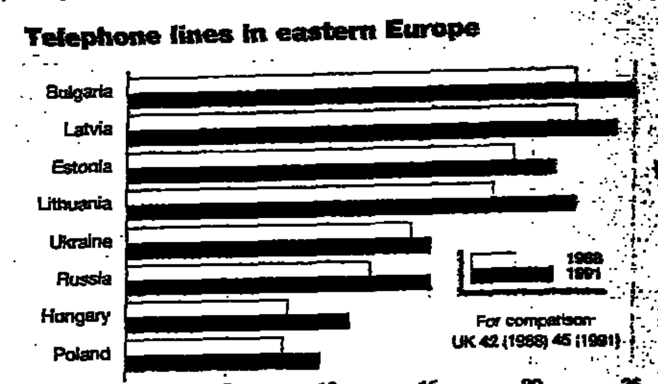
US West has been active elsewhere in the region, recently winning tenders to develop digital mobile networks in 10 Russian cities. The company also has stakes in existing analogue mobile concessions in Hungary and the Czech and Slovak Republics.

Hungary: caller in Budapest using a public phone – made in South Africa Picture: Kester Eddy

In Poland, Ameritech of the US, France Telecom and local partners have invested $120m in their Centertel joint venture. Meanwhile, various Scandinavian operators are embarking on wireless communications development in the Baltic republics. Further south in the former Soviet Union, Deutsche Telekom, Telecom Denmark and PTT Netherlands have combined to provide mobile phones in 21 Ukrainian cities.

Penetration by mobile services has been rapid with the longest established provider, Hungary's Westel joint venture, serving 33,000 subscribers after just three years. Average usage is several times that in the west: many customers have no access to landlines and their mobile phone is their main means of communication.

Telephone lines in eastern Europe



Source: CIT Research

The relative success of mobile communications supports the "leapfrog" theory: that eastern Europe can skip generations of development and leap to the latest technology – "the only technical advantage which the Czech Republic has in telecommunications is that we have to rebuild the infrastructure almost from scratch," says Mr Mihal Cupa, head of the strategy section of national operator SPT Telecom.

The main effort, nevertheless, centres on the more prosaic task of providing more landlines for a population which cannot afford high mobile phone charges. And that is an expensive proposition.

A report by the OECD calculates that $129bn is need to bring average line density to 35 per 100 by the new millenium. Some guesses put investment needs are as high as $320bn.

Much of the funding must inevitably be local. Tariffs have increased sharply in every east European country and the rise is likely to continue. Price capping regulation, in Hungary at least, is expected to allow increases in line with general inflation rather than following the West in subtracting a few percentage points from the RPI.

International institutions, primarily the European Investment Bank, the European Bank for Reconstruction and Development and the World Bank, have also favoured the telecommunications sector for lending.

But the indebtedness of local telecoms operators threatens to become unsustainably heavy. Investment, moreover, is still proceeding far too slowly for east European countries to approach west European telecommunication standards by the year 2000. The shortfall, if it is to be narrowed, will have to be made up by foreign equity investment.

The first powerful infusion is set to occur with the privatisation of more than 30 per cent of Matav, the Hungarian state-owned operator. The leading international telecoms operators bidding have until later this month to make their offers. Already Deutsche Telekom of Germany has formed a consortium with Cable & Wireless of the UK and Ameritech of the US to emerge as the leading contender. France Telecom and US West may make a rival bid, advisers believe.

Hungary's telecoms privatisation may be eastern Europe's first but it will hardly be its last. The Czech Republic has appointed JP Morgan, the US investment bank, to advise on the sale of a minority stake of SPT Telecom, the national operator, to outside investors.

But privatisation in eastern Europe is complicated by legal and regulatory uncertainties – telecoms privatisation more than most. With less than a month to go before the submission of bids for Hungary's telecoms privatisation, it is still not clear how much the national operator will have to contend with local competition. Nor is title to real estate inherited from Hungary's former PTT clearly defined.

Countries compared

The number of main telephone lines in eastern Europe:

Bulgaria	2,250,000
Estonia	340,000
Hungary	1,100,000
Latvia	640,000
Lithuania	820,000
Poland	3,600,000
Russia	22,000,000
Ukraine	8,000,000
For comparison:	
The UK	26,000,000

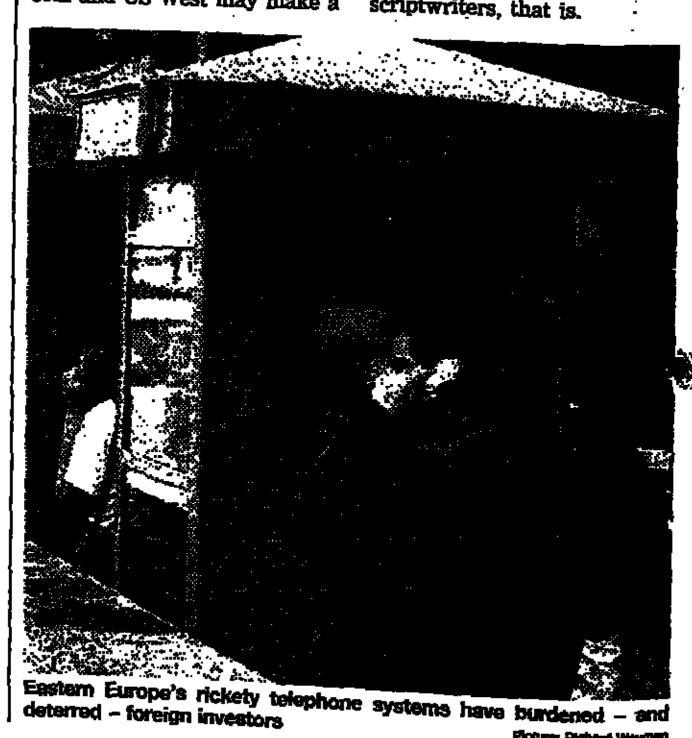
Source: CIT, 1991 figures

No wonder, then, that estimates of the worth of Matav vary wildly. International Technology Consultants's valuation of $2,500 per line gave the Hungarian operator a value of $3.3bn. But the figure is just a starting point. ITC is the first to say that the privatisation format is complex and the regulatory framework fluid.

Whatever the purchase price, investors will have to raise several billion dollars for subsequent development of the network and it is this sum to which the Hungarian authorities are paying the closest attention.

Hungary has already attracted about $5.6bn in foreign investment since reforms began in 1988. And Mr Gyorgy Schamschula, Hungary's telecoms minister, believes: "With Matav's privatisation we have the opportunity to attract as much foreign capital again as has come to Hungary so far."

As that investment, and the inflow into the region as a whole, gather pace, eastern Europe's unpredictable communist telephones will become a historical curiosity. Few will mourn – apart from film scriptwriters, that is.



Eastern Europe's rickety telephone systems have burdened – and deterred – foreign investors Picture: Richard Wayman

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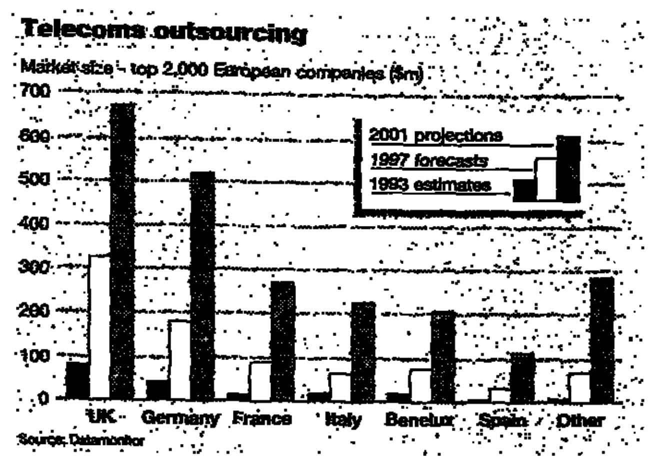
■ OUTSOURCING

Race to supply new global services

The range of services provided by outsourcers is varied and growing. The staple diet includes managed data network services, electronic data interchange facilities, short-dialling options and electronic mail, explains Andrew Adonis



ONE WORD dominates discourse on the growth of international telecoms operators: outsourcing.

The growth potential of the market for outsourcing the telecommunications requirements of multinational companies and other large organisations is the single most cited rationale for the international ambitions of the leading telecoms operators.

There is little agreement on the size of the market. When AT&T launched its WorldSource initiative in May, it talked of 4,000 to 5,000 'target multinationals'; a month later, at the inauguration of its $5.3bn partnership with MCI, BT was touting a more conservative 400 to 500. Either way, the numbers are large and the ambitions commensurate.

AT&T and BT are best placed to become the foremost "global" outsourcers. Both have the cash to build and integrate global networks; both have significant footholds in large markets in their own right; and both have the wherewithal to attract the foreign partners necessary to meet the needs of most multinationals.

AT&T's international outsourcing venture, "WorldSource," is an alliance with Japan's Kokusai Denshin Denwa and Singapore Telecom. Unitel of Canada, Telstra of Australia and Korea Telecom are set to join soon.

The alliance is already in the market for outsourcing contracts embracing the North American and Asia-Pacific regions. AT&T is now trawling for European partners with a view to a European launch next year. Suitors are not lacking.

BT got off to a hesitant outsourcing start in the early 1990s with the launch of Syncordia, a US-based venture dedicated to the job. The need for a stronger US base became imperative, and it secured one this year with its alliance with MCI, the largest US long-distance operator after AT&T. The two will spend around $1bn establishing a joint venture company, based in Washington, to develop the global market.

Several regional groupings are in the market, too. The most significant are Unisource, an alliance of the Swiss, Swedish and Dutch PTTs; and Eunetcom, a consortium of France Telecom and Deutsche Telekom.

In addition, most national carriers have outsourcing ventures catering for domestic companies. Cable and Wireless, the UK group, has an international network of its own, so offers a far more than domestic service.

The range of services provided by outsourcers is growing – it typically includes managed data network services, electronic data interchange facilities, short-dialling options and electronic mail.

Most of the outsourcers are developing software tools to allow virtual private networks to interwork and to support a common set of features such as seven-digit dialling.

Total or partial network management is widely on offer, with operators touting to take over complete ownership of private networks.

It is not just the familiar US multinationals that are in the market for global outsourcers. BT won a milestone £400m contract last month with Grupo Santander, Spain's fourth largest financial services group and parent of Banco Santander.

The contract gives BT ownership and management of Grupo Santander's data communications network covering 31 Spanish cities, which it will manage, upgrade and use to offer a range of managed data communications services to Spanish companies and other large customers.

Governments are also jumping on the bandwagon. Dedicated across much of the world to the virtues of "hiving off" the management of all but core state responsibilities like the army and prisons (and sometimes even those), governments are putting their own networks on the market. Some are looking seriously at foreign operators, not just their national PTO, to take on the job.

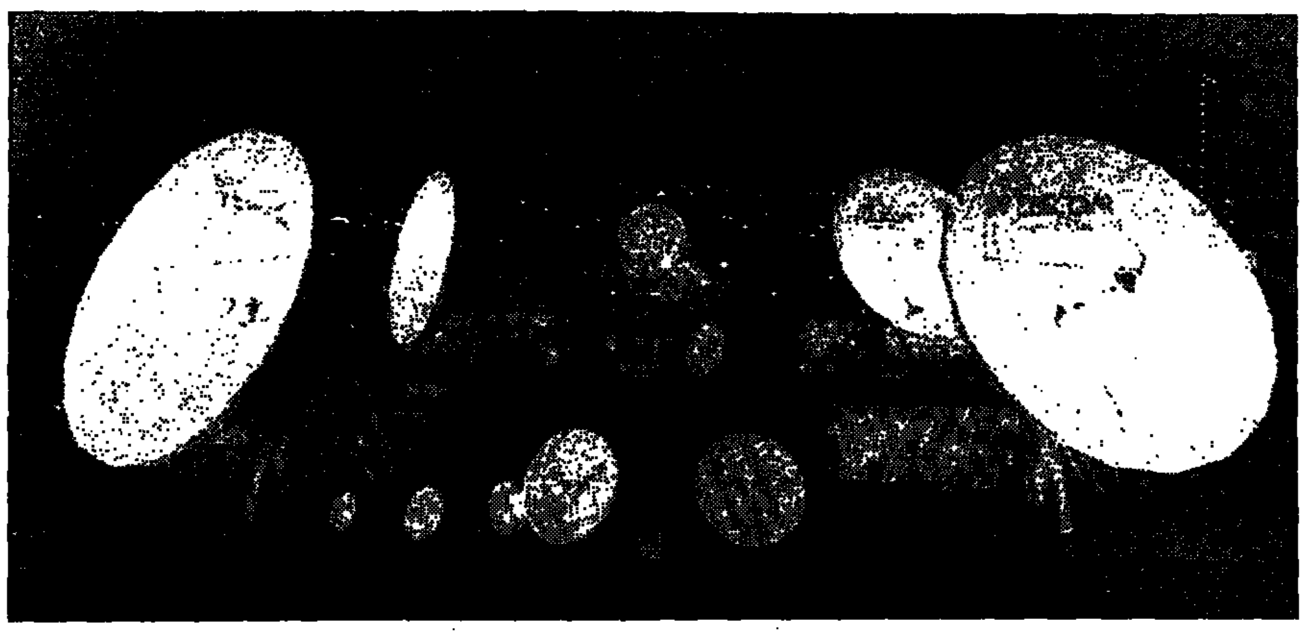
Meanwhile, the UK government has just tendered for its national long-distance network, linking government offices. Mercury Communications, the Cable & Wireless subsidiary, won the contract. The runner-up was Telstra, the state-owned Australian operator, which has a UK public telecoms operator licence and is working hard to build up its business outside Australia.

For Telstra, victory would have been particularly sweet, since BT recently won the contract to run the New South Wales government's contract in Australia.

Outsourcing is not a one-way unstoppable train. Last year Shell put its telecoms network out to tender, stipulating that the outsourcer would have to cut its communications costs. It withdrew the tender, reportedly because all the bids came out more expensive than Shell's in-house operation. It is having another go this year.

Meanwhile, the European Community has given a gold-plated gift to the outsourcers, in the shape of its refusal to force member-states to open their public "voice" networks to competition before 1998.

Satellite technology plays a crucial role in today's fixed and mobile communications: pictured above is the space shuttle Endeavour lifting off from Kennedy Space Center in Florida with a crew of seven on a satellite rescue mission. Pictured below is a night view of satellite dish aerials at the London Teleport, Woolwich. On page 12 of this survey, Paul Taylor reviews new developments in satellite communications. Top picture by Reuter



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■ DEVELOPMENTS IN THE US

Whirlwind of change

Digging up the streets: telephone engineers laying optic cables in New York city — Picture by Glyn Genin

The US telecom scene is in rapid transition with advances in technology, structural changes and intense competition between service providers, reports **Martin Dickson** in New York

TEN YEARS after the break-up of American Telephone & Telegraph in an anti-trust court settlement, the regulatory framework imposed then on the US telecommunications industry is rapidly breaking asunder as the country braces for the new world of multimedia, inter-active communications.

The sector is facing a period of extremely fast change, technologically and structurally, which will produce both big winners and losers.

Under the 1984 settlement, AT&T was divested of its local telephone business, which was divided up into seven regional "Baby Bell" operating companies, each enjoying a monopoly in its own area. Because of their monopoly status, these businesses were prevented from entering the long-distance market, the manufacture of telecommunications equipment, and information services.

The rump AT&T business was left with its long-distance and equipment manufacturing operations. However, the long-distance operations had to compete against upstart rivals like MCI Communications on a much more level playing field than before.

Technological change is starting to render these distinctions anachronistic. In particular, the ability to translate video, audio and data information into digital form and then transmit it along fibre optic lines is blurring the distinction between the telecoms, computer and media businesses.

The biggest changes are taking place in the local telecommunications industry where the monopolies enjoyed by the Baby Bells, as well as the patchwork of non-Bell local telephone companies, are starting to come apart.

Several factors are at work here. One is the growth of so-called Competitive Access Providers (CAPs) – companies which establish themselves in metropolitan areas and operate highly efficient fibre optic networks, creaming off bulk traffic from business customers.

The Federal Communications Commission, the government agency which oversees the industry, has greatly increased the business potential of these firms by giving them the right to inter-connect their networks with those of the local telephone companies.

Another is the inroads being made by long-distance companies, which resent the heavy access charges they have to pay local companies to complete the last few miles of call. Many states are now starting to allow long-distance carriers to compete in the lucrative market for intra-state medium distance calls, once monopolised by the local companies.

An important development here occurred in August when California, the largest telephone market in the nation, announced that it wanted to open up these short-haul toll calls to competition.

Thirdly, the rapid growth of cellular telephone communication is breaking down the monopoly, since it offers an alternative to the local phone company's wired network. Admittedly, the regional Bell companies are among the most important players in the cellular market, since each of them was granted one of two cellular licences in their service areas when these were handed out in the early 1980s.

However, they do face competition from independents ,which is likely to be even stronger in the years ahead, following AT&T's launch in August of a $12.3bn agreed bid for McCaw Cellular Communications, the largest cellular company in the US.

This deal has the Baby Bells particularly concerned, for they fear it will eventually enable AT&T to by-pass their lines, thus stripping them of part of their huge access fees. They are complaining that it represents AT&T's return, after a 10 year absence, to the local service market, and they are redoubling a campaign they have long waged to be allowed access to the long-distance market.

They are also aggressively trying to improve their position on other fronts. After years of lobbying, they managed in 1991 to get a relaxation of the ban which prevented them entering the information services industry.

This prepared the way for Southwestern Bell, which serves Texas and neighbouring states, to make the telephone industry's first big investment in the cable television industry last February, when it agreed to buy two cable systems in suburban Washington DC for $650m.

US West, which serves the Rocky Mountain states and Pacific Northwest, has recently followed that up by making a $2.5bn investment in the cable entertainment operations of Time Warner, the second largest cable operator in the US and a leading producer of filmed entertainment.

The FCC has also helped the phone companies move into this area by agreeing last year that they can provide " video dial tone" – that is, the transmission of television programmes over their own lines for third parties. But the phone companies still face a big stumbling block to full participation in the cable industry, since the 1984 cable act forbids them to provide cable programming in areas where they also provide a phone service.

Still, in a potentially important legal breakthrough, Bell Atlantic, the phone company serving the mid-Atlantic region, won a court case in August which could pave the way for it to offer cable television in its own area. A US district court in Alexandria, Virginia, declared the provisions of the 1984 act unconstitutional, since they violated Bell Atlantic's right to free speech under the first amendment to the US constitution.

The case seems set to go to appeal, but it is a clear indication of the way barriers are tumbling.

The cable companies, for their part, are keen to muscle into the local telecoms business. Many of the CAPs are owned by cable companies, some of which are also developing plans to enter a new type of radio-based telephony, personal communications systems (PCS), which is expected to begin operating in the US over the next two to three years.

All this is putting big pressures on the local telephone companies to improve their efficiency, through jobs cuts and re-organisation of their working methods.

A recent example of the trend came in September, when US West announced plans to cut 9,000 jobs, or 15 per cent of its workforce, as part of a modernisation programme which will consolidate hundreds of local operating centres into 26 regional ones. It was, said the company, a "fundamental response to competition that is here, and is going to evolve through this decade."

In the US, **Frank Lipsius** watches the jockeying to gain consumers' attention

The market hots up

GINGERLY referring to a relationship that goes back to 1908, the American Telephone and Telegraph Company insists that its advertising review is routine. But since AT&T lost its monopoly on American telephone lines and telephones, its campaigns have taken on new importance.

One current $190m TV advertising pitch for AT&T has gained the embarrassing reputation for being "confusing". Even an AT&T executive admitted in print: "I still don't get it," referring to the "i" plan – a broad range of services that neglected to mention that the "i" stood for "individual." Few people knew – even after seeing the commercials – what the services were.

For AT&T, giving up the advertising agency it has used since 1908 is just one more petty humiliation being inflicted by its upstart rival MCI (of which British Telecom recently bought 20 per cent for $4.3bn). MCI has taken about 16 per cent of the market compared to AT&T's 68 per cent, and Sprint's (the third long-distance player), 11 per cent. MCI led the way in offering a reverse-charges service using a toll-free 800 number, only to be followed by AT&T.

AT&T has also lagged in touting services, such as discounts, to a customer's most frequently dialed numbers.

Such jockeying for consumer attention does not come cheap. The journal *Advertising Age* estimates that AT&T spent $329m on measured advertising in 1992, compared to MCI's $103m and Sprint's $87m. And while AT&T's advertising fell by $24m from the year before, both MCI and Sprint increased theirs; the former by almost $10m and the latter, buttressed by a successful campaign featuring Candice Bergen, the actress, by $17m.

One problem in advertising long-distance services lies in differentiating the product. Besides sales gimmicks through selective discounts, the campaigns emphasise Madison Avenue-inspired "qualities" such as being able to hear a pin drop on Sprint, or the negligible price difference between AT&T and MCI (negligible, so far as AT&T is concerned). For its part, MCI has run enormous electronic billboards, keeping track of the savings that mount by the second in using its services.

These trivial squabbles mark only the beginning of the choices that will be bombarding consumers in the increasingly diversified and competitive telecom market.

By the time this particular telecom revolution hits its stride, customers will be seeing more than just a lower long-distance phone bill. After decades of being content with one or two telephones in the house, obsessive consumers can keep themselves permanently available by telephone, while companies can transmit information into a computer which that makes it available around the world as it is being typed.

Many clever "must-have" communication products are in the pipeline to tempt US consumers

The humble house telephone is probably the first place most people are seeing these technological changes affecting their lives. Subscribers to New York Telephone are being offered services that give them more control over phone intrusions. "Call ID," at $6.50 a month, shows the number of the caller as the telephone rings; "Call Return," by dialling three digits, calls back the last number on the line; and "Repeat Dialling", costing the same as Call Return at 75 cents, keeps on dialling until an engaged number is free.

For the technologically literate, the latest fashion is for wireless systems that began with car phones and soon shrank in size, allowing pedestrians and restaurant patrons to have constant telephone companions. More than 12m Americans have signed on to cellular systems – a figure expected to double by the end of the decade.

Shadows over cellular's manifest destiny are the new band widths which the US government now intends to auction for a high-frequency digital channel devoted to PCS – "personal communication services." PCS combines fax, telephone and modem, for personal and computer-to-computer contact.

The bidding for this space has created the only buoyant market in American property – cellular band width. As Tom Wheeler, president of the Cellular Telecommunications Industry Association, contends: "It's the 21st century equivalent of the Oklahoma land rush."

MCI is betting on the new PCS technology because its digital transmission solves the problems of the present generation of cellular service – problems which cause 30 per cent of the customers to drop out every year because of quality, cost or poor service.

To make the new short band width work, the PCS network may need transmitters every 500 to 1,000 feet. This would be a daunting investment; it could ultimately cost three competing systems a collective $22bn to install by the time of inauguration in about 1997.

Capital outlays may discourage the faint at heart, but the brave can see that new technologies breed new uses. Thanks to Motorola, the American cellular manufacturing pioneer, even China has 3m people on a paging system which transmits coded messages rather than giving a telephone number, using numbers to mean "return to office", "go to post office," and the like.

Businesses in Philadelphia have data entry done in South Dakota as if it were in the next room. In the highly competitive data-transmittal business that includes services from the big long-distance carriers, as well as Cable and Wireless and CompuServe – best known for its on-line information service – some American data out-sourcing goes to the Caribbean. CompuServe's network services division, with revenues approaching $400m a year, does the online transmittal of Visa's 600m credit-card transactions and verifications, among its other tasks.

As the technological revolution progresses, it will sweep up even its early ally and progenitor, the humble house telephone. Already the new product called "pda", or "personal digital assistant", packages computer data and telephone service together.

The most advanced of these so far is AT&T's EO, which includes a cellular telephone with the services offered in common with its competitors Apple Newton MessagePad, Sharp Expert Pad and Casio Z-7000. All three have first-generation handwriting recognition.

At three times the $700 cost of the competitors' simpler models, the EO 440 also sends and receives faxes.

Combining computer and telephone technologies creates an exciting future. There will be many "must-have" products among the huge range of possibilities opening to the most adventurous, imaginative and skilled telecom providers.

Telecom re-sellers make big gains, reports **Geoffrey Wheelwright**

Canadian companies cry foul

COMPETITION has come to the Canadian telecommunications industry – and the established players in this market are not happy about it.

Despite the presence of a conservative, deregulating government for the past 11 years, Canadian telephone companies have enjoyed nearly a monopoly in the provision of domestic and business telephone services, almost from the very moment Alexander Graham Bell, invented the telephone.

But over the past three years that has started to change. In 1990 the government's telecoms regulatory body – the Canadian Radio and Television and Telecommunications Commission (CRTC) – allowed telecom resellers into the market. Two years later it approved the entry of independent competitors.

The idea for the resellers was simple: they were to be allowed to buy long-distance telecom services in bulk from existing monopoly suppliers and then resell them competitively in much smaller units to business and residential customers.

The problem for Canada's existing telephone companies, however, was that long-distance services were their bread and butter.

LONG-DISTANCE services have traditionally cost more in Canada than in the nearby US, largely because long-distance profits have had to subsidise the cost of local residential phone services.

The Canadian government has long kept a tight lid on the amounts that could be charged to consumers for such services. The average Canadian home-owner pays only about C$15 (about US$12.50) a month for their line rental, and can make as many local calls as they like once that line rental is paid. Realising that this might create problems, the government did force resellers to put in a part of their profits to help subsidise local calling.

One of the reasons Canadian phone companies are now crying foul is that the re-sellers need not contribute anything like as much of their profits to support local calling services as the established Canadian phone companies must.

For example, in British Columbia, Canada's westernmost province, the long-time monopoly supplier British Columbia Telephone (BC Tel, as it is known locally) must contribute, towards the cost of subsidising local calls, 20 cents out of the 35 cent per minute minimum charge on every inter-provincial long distance telephone call.

Competitive re-sellers such as Cable & Wireless Telecommunications, the multinational telecom giant, or Cam-Net Communications, the Canadian supplier, are only required by government to contribute between two and three cents per minute.

These means that although BC Tel and the re-sellers are both making 15 cents per minute on inter-provincial long-distance calls, BC Tel has to charge customers 35 cents per minute – while re-sellers can make the same profit by only charging as little as 17 cents per minute.

BC Tel and other Canadian telephone companies say that this government-legislated encouragement to re-sellers is hitting them hard. BC Tel estimates that it is losing some C$70m alone in long-distance business to resellers.

When the government unveiled its scheme to increase long-distance competition three years ago, it estimated that resellers would only capture about 2 per cent of the market. But by mid-1992, the re-sellers already claimed some 6 per cent market share – and now have about 10 per cent.

The area where Canadian telephone companies are losing the most money is in cross-border calls to the widely deregulated US. Using their leased bulk, Canadian telephone lines re-sellers can not only sell consumers a cheaper long- distance service within Canada, but they can route calls to the nearest US city across the border – and then patch into the US and international long-distance carriers.

There are more than 40 long distance telephone service resellers in Canada. They are already claiming some 65 per cent of the Canada-US business long distance telephone traffic – representing a staggering growth from their entry into the market only three years ago.

But telecom resellers are no longer the only worry facing established Canadian telecommunications providers.

IN 1992, the CRTC approved bids by two Canadian companies to provide competitive long-distance telephone service throughout the country.

The two companies, Unitel Communications based in Toronto, and BCRL, based in British Columbia (a telecom division of the provincially-owned BC Rail corporation), were granted the right to start offering competitive telecom services.

The value of the Canadian long distance telephone market is estimated at about C$7.5bn a year. Canada's existing telecom service providers did not give up this monopoly without a fight, either.

As with the case of the re-sellers, Canadian phone companies argued that the new players do not have to subsidise the cost of local phone calls (which are still unlimited after a basic monthly line rate has been paid).

The CRTC has addressed this, however, by agreeing to a plan that will see the new competitors pay in up to C$11bn to assist in paying the cost of local phone rate subsidies during the period in which the competition is ramping up its business.

Two of the country's largest established phone companies, BC Tel and Bell Canada, tried unsuccessfully last year to appeal the decision.

They claimed that initially competitors are not being be required to pay as much toward subsidising local rates as they must – and that they have had to pay up to 70 per cent of the C$50m cost of re-engineering their telephone networks so that their new competitors can more easily hook into them.

According to Mr Brian Canfield, president and chief executive of BC Tel, Canadians ignore the regulatory problems of their telephone companies at their peril.

"The Canadian regulatory environment for telecommunications has served our country's social policy needs very well in the past, creating a national telecommunications network that is truly accessible to all," he says.

"In British Columbia, telephone service is virtually universal – more than 98 per cent of our population is plugged into the (telephone) network. Unfortunately, the same regulatory mandate responsible for this accomplishment is becoming increasingly out of touch with reality."

Mr Canfield evinces strong Canadian nationalist sentiment in defence of his company's argument against the recent regulatory changes.

Current regulations leave Canada vulnerable to telecom providers "who are unencumbered by our regulations and who act solely in their own narrow, short-term interests, with little thought to what is best for Canada," he adds.

Individually, none of Canada's big telecom service providers is large enough, by world standards.

In revenue-terms, "we are only half the size of British Telecom, only one-third the size of AT&T and only one-quarter the size of Nippon Telephone and Telegraph," he says.

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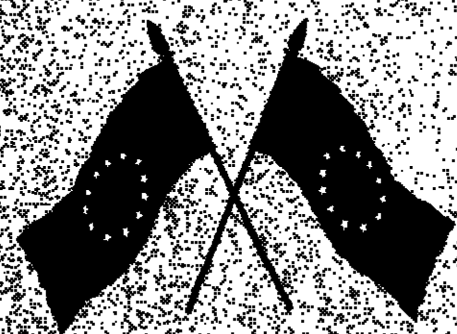
BREAKING THE BARRIERS

THE MOST ADVANCED MOBILE PHONE NETWORK



We have broken the barriers. We have created a new tomorrow for businessmen and travellers both here and in Europe. New frontiers beckon. ¶ Vodafone proudly announces EuroDigital. The most advanced mobile phone network. So sophisticated, that it can be used to make and receive calls in Europe. ¶ EuroDigital represents a revolution in mobile phone technology. A superior digital system provides the highest ever call quality. A quality that doesn't falter, that doesn't break up. A quality that offers the highest call security ever. Line rental is £27.50 per month, UK call charges 25p per minute peak, 10p off peak. Only Vodafone can offer this. ¶ Now the barriers are down, it's up to you to grasp the European opportunity. ¶ Call free, 0500 123 123 and ask for more information. All prices are recommended and are exclusive of V.A.T.

VODAFONE
EuroDigital

Leading telecom markets in the Asia-Pacific region

Country	Phone lines per 100 popn. 1991	Phone lines per 100 popn. 1992	Line growth 1992-2000, in '000s **	Revenue in 1991, $m	CAG rate* since 1982, per cent	Investment in 1991	Invest. as % of revenue
Japan	45.4	59.2	20,000	49,107	2.1	17,844	36.3
Australia	46.4	54.1	2,500	7,426	4.3	2,329	31.4
South Korea	33.7	48.4	8,000	6,119	10.3	3,249	53.1
India	0.7	2.1	15,000	2,698	10.1	1,584	58.4
China	0.7	2.3	20,000	2,671	-	1,617	60.6
Kong Kong	45.9	64.9	1,500	2,364	7.1	283	12.0
New Zealand	44.2	58.2	500	1,485	2.7	385	25.9
Singapore	39.9	57.1	600	1,326	11.5	639	48.2
Indonesia	0.7	2.1	3,000	1,320	11.4	792	60.0
Thailand	2.7	6.6	4,000	1,300	14.2	550	42.3
Malaysia	9.9	29.1	5,000	1,092	9.7	504	46.1
Philippines	1.0	3.0	2,000	604	7.3	300	49.6
Pakistan	1.0	2.5	3,000	539	6.9	269	49.9
Sri Lanka	0.7	2.4	300	118	7.3	19	15.7
Total/average*	-	-	85,400	78,169	3.7*	30,364	39.9*

☐ Countries are ranked by 1991 revenues. *CAG rate indicates compound annual growth rate. **Forecast.
☐ The dynamic economies of the Asia-Pacific area will experience rapid growth in telecom service revenues in this decade, according to a report by the International Telecommunications Union (ITU).
Source: FT Telecoms Market Newsletter.

■ CHINA'S TELEPHONE TARGET

100 million lines by year 2000

The big growth area for foreign telecom exporters to China is public switching equipment, reports **Lynne Curry** in Beijing

IN THE *face of* China's critical shortage of telephone lines and public switching equipment, foreign telecommunications manufacturers are engaged in an intense battle for market share to meet the enormous consumer demand in the world's fastest growing economy.

"It's a big, big market," comments a western business executive from a telecommunications multinational. "No matter how fast China's population grows, the demand for telephones is still increasing at phenomenal rates."

China has 17 million phone lines. It has already nearly reached its target for the country's five-year plan, which ends in 1995. China's official goal now is to have 100 million lines operating by the year 2000. Nationwide, this means China has about 1.7 telephones for every 100 people. In contrast, the United States has about 60 telephones per 100 people.

China's public pay phones are scarce and the utilisation rate is so heavy domestically that most telephones are busy ninety per cent of the time.

In addition, getting through to the right number is difficult – "the 'hit rate' is so bad that callers have to recall and redial and recall," says a western businessman.

The largest growth area for foreign telecommunication exporters is public switching equipment, which some industry sources say is a billion dollar marketplace in China.

The country is modernising and updating its telephone exchanges by installing "stored program computers" (SPCs) to replace the older electro-mechanical equipment to do the switching.

The dominant equipment manufacturers in this market are Alcatel, Ericsson, Northern Telecom, Siemens, NEC, Fujitsu, and AT & T.

Initially, China's State Council allowed only three of these multinationals to form Sino-foreign joint ventures to manufacture switching equipment. These were Shanghai Bell, which is an affiliate of Alcatel, a Beijing-based joint venture by Siemens, and a company formed with Japan's NEC in Tianjin.

But other multinationals were unhappy at being frozen out. Under pressure from the American government and lobbying by various companies, industry sources said the Chinese Ministry of Posts and Telecommunications recently agreed to ease restrictions on the lucrative switching market.

Northern Telecom recently concluded a $159m deal to sell switching contracts to four Chinese provinces and expects to begin producing switching equipment in Quangdong province in southern China by the end of the year or by early 1994.

Earlier this year, AT & T was also given permission to launch a joint venture in Qingdao to manufacture switching equipment.

In February, AT & T signed a far-reaching memorandum of understanding to jointly develop manufacturing plants and research and development projects in China's telecommunications industry.

The competition has intensified in the last year as customers have sought to purchase equipment with more than just switching capability.

"Customers are looking for more and more high-tech products – and not just pure switching capacity," explains a western business executive.

"The customer is concerned with quality, performance and the different functions of switching equipment."

Industry sources report that Japanese suppliers, such as NEC and others, have lost some market share to other foreign manufacturers in China in the last year. They report that the top three foreign companies are Alcatel with 31.2 per cent of the market, Ericsson 23.6 per cent, and Northern Telecom with 19.1 per cent.

As the market leader, Alcatel is the most aggressive. Its joint venture with Shanghai Bell has more than trebled its design capacity of over 360,000 lines to produce more than two million lines last year. Alcatel also sold an additional two million lines direct to various MPTs.

Alcatel has also been able to obtain soft loans from various European governments for telecommunications purchases. Its Belgian subsidiary signed a $250m loan with the Chinese in the spring. And the company's Spanish subsidiary agreed to an even larger $500m deal for the purchase of telecommunication switches.

Meanwhile, Ericsson has won a $300m contract to install 1.8m lines in Guangdong over the next few years.

Demand is so great that Siemens has also doubled its original production capacity in its Beijing operation from one million lines to 1.5m this year and 2m next year. Last year the joint venture produced 370,000 lines.

The demand for mobile telephones in China is unparalleled

Apart from switching equipment (or SPCs), another booming growth area is the cellular mobile phone market.

"It's expanding so rapidly that you can't compare it with anything else in the world," says a business executive.

Ericsson and Motorola are the leaders of this market. Both have manufacturing operations in China. Siemens has also recently announced it is establishing a joint venture in Shanghai to produce radio handsets and transmission equipment.

Though the cellular market is growing dramatically, industry sources say it is still relatively small for the country's size.

Subscribers are still less than 300,000, although line capacity is about a million. In comparison, Hong Kong, which has a population of 5.5m, has about 250,000 subscribers.

Mobile telephone subscriber costs are high in China. Subscriber fees are about 25,000 renminbi (US$4,386), but demand is still great for this service, particularly in China's Pearl River Delta in Guangdong, and in the country's rural hinterland.

Cellular phones are more attractive to many business customers because a radio network can be installed more quickly than cables could ever be laid for a conventional telephone system.

Other promising areas of growth include micro-wave equipment and optical fibre cables to link China's more remote areas.

Optical fibre systems are increasingly being used for long distance transmission in China because the quality of communications is said to be better than that of microwav systems; and cable systems are less subject to climatic interference. But microwaves still have some advantages over optical fibre systems. For particularly long distances, the equipment requires less time to installation time and causes less disruption in cities where roads would need to be dug up to lay cables.

■ JAPAN

Regulators keep tight control

Japan's telecommunications industry is still highly regulated, reports **Michiyo Nakamoto** in Tokyo

THIS summer, NTT, the world's second largest telecommunications company, said that fierce competition from competitors was forcing it to seek voluntary retirement among its employees in a bid to reduce staff numbers by 30,000 over the next several years.

The move by NTT, which shook a Japanese public long accustomed to stability in the labour market, revealed one of the more unfortunate effects of the growing trend in Japan to liberalise the telecommunications industry.

But, while NTT's decision was made in response to market forces, it was also dictated to a large extent by a Ministry of Posts and Telecommunications' decree that even in an increasingly competitive environment, the telecommunications operator will cut costs before it is allowed to raise prices where it has the ability to do so.

NTT's plight stems from a need to adjust its operations to a fast-changing environment. It will have to make further adjustments as the Japanese telecommunications industry, in common with those of other leading economies, undergoes a period of rapid transformation that is being triggered by the speed of advances in telecommunications technology.

Optical fibre technology, for example, is making it possible to offer more advanced and speedier forms of communications, such as video on demand or video conferencing services.

But, while such technological progress forms the basis for change in the industry, it is the policy decisions made by public regulators striving to keep pace with the technology that determines the nature of the changes the industry will have to live with.

Despite a broad move towards deregulation in the country, regulation of the telecommunications industry in Japan is still very tight, and there are few signs that the grip of the regulators is set to relax dramatically in the next few years.

Characteristically, the Japanese authorities continue to take a paternalistic attitude towards the telecommunications industry, which they see primarily as a provider of a public service.

That view has shaped their approach not only to the liberalisation of the telecoms market but also to the introduction of the new services that are becoming possible with the rapid advances in fibre optics technology.

The enhancement of capacity and speed will make telecommunications a key element of Japan's social infrastructure by making possible new services, such as improved teleconferencing, interactive TV and video on demand, says Mr Tetsuo Yamakawa, senior advisor in the communications policy bureau of the policy division at the Ministry of Posts and Telecommunications.

This, in turn, will help revitalise manufacturing industry, ease overcrowding in cities and improve the quality of life, he believes.

But at the same time, however, these changes throw up difficulties that are challenging the Japanese authorities' ability to decide what policies are in the best public interest.

The spread of fibre optics, which allows broadcasting and telecommunications services to be provided on the same network, will erode the boundary that separates the two industries.

While this may not normally be a problem for industries that operate strictly on market forces, it is posing a major dilemma for the Telecommunications Ministry which sees a fundamental difference in the aims of the two industries.

Technical advances are forcing a re-think on telecom regulations

"The problem with putting broadcasting and telecommunications on one network is that broadcasting is a service that is by its nature open, whereas telecommunications is private and closed," says Mr Yamakawa. "Is it a good idea to put these two industries together?" he asks.

The other problem, Mr Yamakawa points out, is that the two industries are structured completely differently. The broadcasting industry only has to worry about making profits, whereas the telecommunications industry must concern itself with the needs of the public. If the two businesses come together, which will take priority, profits or the public?

Tough day for a Tokyo money dealer: Japan's telecommunications service suppliers have problems, too
Picture by Kimimasa Mayama/ Reuter

Next spring, the ministry is beginning a pilot project to study the feasibility of integrating broadcasting and telecommunications services through optic fibre networks.

The pilot project, supported by telecommunications carriers, broadcasters and equipment manufacturers from both Japan and overseas, will construct a model network including 300 end-user facilities in the Kansai Science City near Kyoto, Osaka and Nara. It will provide high definition TV, bilateral advanced cable TV, video on demand, videophone and video-conferencing services on an experimental basis.

The ministry sees the pilot project as an experiment in policy rather than technology – "we will be considering through the project, who should be the provider of the new integrated services," Mr Yamakawa says.

The pilot project will go on for three years. In the meantime, a government advisory committe which is deliberating on the issue, will present its proposal next March on how the infrastructure for the new telecommunications network should be built.

In parallel with these developments in their home market, Japan's telecom operators are facing the need to keep pace with developments on the international front to secure new sources of revenue but also to ensure that they do not get left behind in the race to provide new telecommunications services.

The separation of domestic and international telecommunications businesses under Japanese law makes this extremely difficult.

"Telecommunications is a trans-national business, so separating the two sides is like putting a rope around your own neck," says Mr Kazuo Asada, senior vice president of international affairs at NTT.

But an easing of this rule of separation by the Ministry last May is providing possibilities Japan's telecommunications operators did not have before. Although domestic carriers are not allowed to do trans-national business, they are now allowed to operate within the domestic market of a foreign country.

The relaxation of the rule is encouraging NTT, for example, to move into the mobile communications and mulitmedia businesses outside Japan.

Mr Asada is interested in the US in particular, since that country is a melting pot of new communications technology and services and would provide opportunities to test the company's hand at new services such as personal handy phones which combine computer capabilities with mobile communications.

Mr Asada is looking for opportunities to tie up with a cable operator in the US or form a joint venture with a mobile phones business there.

"We want to do something different from conventional phone business," he says.

While Japan's technological know-how in telecommunications has a high reputation internationally, the restrictions imposed by the country's regulatory regime has made it necessary for the Japanese industry to follow the lead of the US in providing new services.

The hopes in the industry are that the regulators will take a more forward-looking view in their decision over who should provide the next generation network.

■ MULTIMEDIA

A new breed of communications

The convergence of media, communications and computer technologies promises to create a revolution in communications which will be as profound as the building of the railways in the last century, reports **Philip Manchester**

THE telecommunications industry is likely to be the first to feel the full impact of multimedia – technology that combines communications with animated, high-resolution computer graphics and video, hi-fi sound, computer data and – most important of all – interaction between the system and the user.

Now, a new breed of communications services, which have the power and capacity to carry video images alongside traditional audio, have made video-conferencing and desktop digital video possible.

Integrated Services Digital Networks (ISDN), which can carry all forms of multimedia data, are now widely available, high-speed local area networks which can handle the large data volumes are becoming available and terminal equipment is falling in price.

At the same time, telecommunications suppliers are adopting international standards which will make it feasible to introduce full multimedia communications in the next few years.

These developments in the telecommunications infrastructure will open the door to many new exciting applications – particularly those that involve remote co-operative working. Current electronic mail and workgroup applications, for example, will receive a boost from full multimedia communications and allow people to work together in new ways.

The market research group, Ovum, forecasts significant growth for multimedia communications in the next five years. From a base of zero in 1991, Ovum estimates that revenues from multimedia communications software in the US and Europe will be over $1.6bn by 1997.

"All the technology building blocks are in place – we just need to find a way to integrate them so they work together seamlessly," says Mr Claude L'Eglise, video brand director at Intel.

Mr L'Eglise believes that the desktop computer is most likely candidate as the primary platform for multimedia terminals.

Although telecommunications suppliers – such as British Telecom in the UK – have introduced stand-alone videophone systems, it seems unlikely that people are going to want yet another TV screen on their desks.

If they *are* to have video, they want it integrated into their desktop computer.

Intel is working with a number of partners to take the next step and make it possible to deliver multimedia communications to the desktop.

In addition to its work at the microprocessor level with the Indeo technology to speed up digital video processing, Intel is working with Microsoft to develop away to control telephone systems digitally.

Intel is also working with Siemens Nixdorf and Ericsson to develop deliverable multimedia services across networks.

But the cost of terminal equipment is key – "the price of a multimedia-equipped PC must be low enough to attract the market and it must be easy to install and use. We are getting nearer to this everyday," Mr L'Eglise explains.

"Multimedia gives us different ways to tackle old problems"

"The PC and the Macintosh are powerful enough to act as terminal devices and the public networks are fast enough to carry the signals," he says.

Mr L'Eglise sees a big market for multimedia telecommunications – especially for remote and co-operative working – "people want to exchange documents and work on them together. We see multimedia communications offering the ability to do this over a network," he says.

Some users may be closer to multimedia communications than they know. For example, users of the 2100 Premier telephone service, supplied by UK telecommunications company Mercury, only require minor hardware additions to plug their PCs into the network now.

"Most of our customers do not realise yet that they can use multimedia communications by plugging their PCs into our network through an IST 'FeaturePhone.' We hope to raise awareness of this service this year," says Mr Robert Ralphs, application manager at Mercury.

"Terminal equipment is coming down to a price which people can afford and they already use electronic mail systems. It is not too much to expect that *they will take the next step* and move to multimedia," explains Mr Ralphs.

The first products to exploit the new communications infrastructure have already begum to emerge. Northern Telecom, for example, announced its 'Visit' system and demonstrated it at the Multimedia Show at London's Earls Court, earlier this year.

Olivetti has been working for some time on digital video on the desktop at its research laboratories in Cambridge. The Pandora project – which brought multimedia communications to desktop workstations a couple of years ago – has produced what Olivetti calls the Personal Communication Computer (PCC).

BT's desk-top video-conferencing units are dedicated, visual tools which can have added document readers and auxiliary cameras. They allow small groups of people to meet and send pictures and videos.

The PCC, which is based on a standard Windows PC, not only brings video communications to the desktop – it also enables two users to work on the same information over an *ISDN link*.

Pilot systems are already being tested in the UK and in *Italy*.

Olivetti has used similar technology to create a multimedia banking "kiosk" which lets customers access their accounts and call up a human financial "counsellor" who appears in a digital video window in the corner of the screen to give advice.

Both the customer and the adviser can look at the same account data simultaneously.

Pilot systems are installed at *three branches of the San* Paulo Institute, one of Italy's largest retail banks.

Mr Mark Churchward, a divisional manager at Olivetti UK, sees these systems as only the beginning of what can be done with multimedia communications.

"We see multimedia as a technology – not a market. So we are coming with new ideas based on what our customers are telling us.

"Multimedia gives us different ways to tackle old problems," he says.

One key area of development is in remote diagnosis. Multimedia networks provide experts with the ability to examine problems in detail without being present at the site of the problem.

This applies as much to, say, a medical problem where a surgeon can monitor an operation remotely, as it does to technical problem with an aircraft where an engineer diagnose a fault remotely.

Mr Churchward notes, for example, that the paper documentation for a Boeing 747 jumbo jet weighs more than the aircraft. He says that Boeing is working on ways not only to record documentation electronically, but also to structure in such a way that data can be accessed remotely and used for diagnosing problems.

Similarly, the "Superjanet" network which links research institutions across the UK, provides multimedia communications for researchers and medical practitioners to work remotely.

In both cases the need is for a rich level of communications which can only be provided by full multimedia technology. The convergence of media, communications and computer technologies promises to create a revolution in communications which will be as profound as the building of the railways in the last century.

Businesses which recognise this early will be the leaders of the next century.

NEWS IN BRIEF

Video links 14 cities in China

GPT Video Systems of Maidenhead is supplying what is claimed to be the first video-conferencing network in China. Fourteen cities will be video-linked in Hunan Province.

"The problem facing Chinese officials is the fast distances they have to cover to attend a face-to-face meetings," says Mr Tom Doyle, director of video and ISDN systems at GPT. The Chinese network could also be linked with international, interactive video meetings with western industrial companies, he says.

Satellite applications in Asia

Research in south-east Asia has revealed the need for a new hardware-orientated exhibition for cable and satellite technologies, says Reed Exhibition Companies of London.

"Cable & Satellite '94", focusing on the operational needs of business, will be held at the Hong Kong Exhibition Centre from November 30 to December 2, next year.

Telecom revenues up 11 per cent

Western European revenues from the provision of telecommunications totalled Ecu 102.1 (equal to $119bn or £79bn) last year – up 11 per cent on 1991, according to a new report from the London-based CIT Research group. But between 1992 and 2002, CIT expects an annual average growth rate of 5.6 per cent a year in real terms.

Despite the big strides in telecoms network technology and services over the last 20 years, public switched telephony networks (PSTNs) are still the mainstay of European telecommunications. In 1992, says CIT, Ecu 83.3bn worth of phone bills were paid across western Europe – a sum equivalent to $97bn or £64bn.

About 25 per cent of PSTN charges were for access (connection and line rental) and 75 per cent for calls.

Trend towards global networks

British business is on the verge of "massive worldwide networking investment," according to new research among 100 leading UK organisations.

The report, by analysts at Booz Allen & Hamilton, found that 55 per cent of companies have international networking requirements, with the majority (67 per cent) wishing to link territories globally, rather than just within Europe (27 per cent), followed by the US (18 per cent) and the Far East (13 per cent).

Alan Davis, managing director of Ascom Timeplex, a leader in the total networking solutions sector – and publisher of the report – says that the sharing of business information "is not just from desk to desk or from office to office, but rather from country to country. UK companies realise that linking globally is a means of gaining competitive advantage in a worldwide market."

Research by Booz Allen & Hamilton on networking market trends, established four critical factors: changes in voice management, computing, carrier strategies and user competencies – all of which impact the development of networking in Europe, the US and Japan in different ways.

In the US, for example, most of the users in the survey had shifted a large portion of their voice traffic to virtual private networks, but in the Far East almost all traffic is on the public network. These differences, says Alan Davis, affect the way in which companies communicate globally and require network suppliers to have an in-depth grasp of networking across countries.

Consultants Touche Ross, the accountancy firm, in another report on the business impact of "wire-less" communications, say that "companies know about that wire-less communications deliver real benefits, but have yet to be fully persuaded that the investment is justified."

Touche Ross believes that "substantial growth will come over the next five years, driven by the development of applications that enable users to reap the full benefits of the technology."

The race to supply new global services: see page 7.

New business opportunities

The development of wireless computer technology, as used in today's cellular telephones, personal communications systems or mobile radio systems, will create a new area of business and marketing potential, according to CSC Index, the international management consultancy.

The forecast lists several areas of opportunity: first, is the 'migration' of business transactions – wireless technology will anable sales and service transactions to be made as close to the customer as possible, unlike most current transactions which have to take place at a fixed point next to a computer – for example, at the cash register, reservation desk or office.

This 'untethered' communications facility is already being tested by an international airline in a roving check-in service for passengers as they enter air terminals. Their travel information is then entered into a hand-held computer connected to the check-in system over a radio network.

Other areas for development singled out by CSC Index – a subsidiary of Computer Sciences Corporation – are the tracking and deployment of items in a supply chain, where trucks can tracked and goods 'tell you' where they are; also in 'turbo-charging' business organisation – speeding the administrative reactions to customers, suppliers or employees by providing on-the-spot response and acceleration of planning processes.

The consultants forecast that by the year 2000 as much as half of all voice and data communications traffic could be via wireless computer technology.

Satellite link for auto parts distributor

Dana Distribution UK, an automotive after-market company, has signed a contract with Hughes-Maxat under which all its 115 locations will be provided with a two-way VSAT (very small aperture terminal) network.

This network links Dana's Swindon headquarters, its main UK distribution centre in Milton Keynes and 113 branches, and will carry all sales and inventory details on more than 40,000 product lines.

£4m investment in cellular services

Securicor Cellular Services is investing £4m to improve customer service. Research by SCS, the cellular service provider of the Securicor group, shows that while more than 85 per cent of customers are "reasonably satisfied" with service they receive, the company aims "to create differentiation through service delivery, raising customer expectations, industry-wide."

Michael Wiltshire

■ SATELLITE TECHNOLOGY

More vital than ever

By the turn of the century, satellite technology may well have plugged the last gap in providing a truly global mobile telecommunications system, writes Paul Taylor

SATELLITES already play a crucial role in fixed and mobile telecommunications. They provide voice, data and video links across continents and oceans, maritime and aeronautical communications where land-based systems are not an option and global positioning and tracking services for military and other customers.

Increasingly, they are being used in the US and elsewhere to provide two-way Vsat (Very small aperture terminal) satellite telecommunications services to businesses – a market which in the UK alone is expected to grow to between £20m and £30m within the next five years.

They are also used to provide telecommunications facilities to geologists, journalists and others in remote or inhospitable regions of the world using briefcase-size portable satellite terminals, such as those supplied by Inmarsat, the London-based 69-member International Maritime Satellite Organisation. Inmarsat, which uses four operational satellites, already has 25,000 customers, most of them in its traditional market of ship-to-shore communications.

These services are mostly based on geo-stationary satellites (Geos) which orbit the earth at a height of between 12,000 and 25,000 miles. But soon, if plans go to schedule, a new type of satellite system based on low earth orbit (Leo) satellites will help deliver the first truly global handheld mobile telephone service capable of providing voice and data telecommunications literally "any where on earth."

Among the handful of Leo-based telecommunications system proposals which have been unveiled in the last few years by international consortia, the $3.4bn Iridium project, conceived by Motorola, the US-based electronics group, is probably the most ambitious and advanced.

The Iridium project will be based on a 66 Leo satellites ringing the earth at a height of just under 500 miles with each satellite in sight of several others at all times. Thus a message to or from a handheld mobile telephone operating on the Iridium network could be transferred between satellites before being beamed down to its destination anywhere on earth.

Two months ago Motorola announced that after several years of funding all the research itself, it had raised $800m from an international consortium, including Bell Canada, Raytheon, Sprint, Sony and Mitsubishi as the first stage towards financing the Iridium project.

As prime contractor for the project, Motorola will be responsible for designing and building the entire Iridium network and has a $2.8bn contract to maintain and operate the system for five years after it is launched in 1998. By that stage, Motorola's stake in the project will have fallen from 34 per cent to 15 per cent as new investors join.

The financing agreement gives Iridium a clear lead in the race to build a satellite-based mobile telephone system based on Leo technology.

Leos are designed to orbit at between 450 to 6,000 miles; and because they are closer to earth than geo-stationary satellites, telecommunications systems built around Leos should suffer less from the characteristic echo heard on some satellite voice links.

They will also work with much less powerful – and therefore smaller, lighter and cheaper – telecommunications equipment including pocket-sized handsets.

But there are disadvantages. Like Geos, they are solar powered but because they orbit lower they will spend more time in shadow and therefore have a shorter life span, perhaps five years instead of 10 or more for conventional satellites.

However, their biggest – and costliest – disadvantage is that to provide reliable global coverage many more Leos are needed than would be the case with their higher-flying counterparts.

This also means a large number of launches, and an extended roll-out time. For example, Iridium plans to place its 'constellation' of satellites in orbit over two years starting in 1996 and will use a combination of McDonnell Douglas Delta rockets from the US, the Proton rocket from Russia and China's Long March launch vehicle.

Another five consortia, mainly comprising US and European space and telecommunications companies, have proposed similar schemes although none are quite so ambitious as Iridium and most of them still have to win solid financial backing.

Most of the groups plan to start commercial operations between 1996 and the end of the decade. Several other groups have plans for Leo systems which would provide data rather than voice services.

MOTOROLA'S success in securing financial backing for Iridium is likely to trigger a race between the other Leo contenders, not only because there are limits to the world's satellite launching capacity, but also because most analysts believe the market can probably support only two competitors.

To supplement revenues from voice traffic Leo systems will also carry fax messages, paging, facsimile, computer data and provide radio-determination satellite services – services which locate radio transmitters by latitude and longitude. They could also provide voice and data links for the next generation of personal digital assistants which will begin appearing later this decade.

Iridium hopes to have 2m customers four years after the network becomes operational. Each customer will have to buy either an Iridium handset or a dual purpose handset which will work with both Iridium and the buyer's own local mobile telephone network. Calls will cost about $3 a minute and the handsets are likely to cost about $1,700.

Some analysts question whether Leos make economic sense as a mass market voice telecom delivery system in competition with much cheaper terrestrial-based networks, especially since it seems probable that there will be an oversupply of satellite system networks.

Aside from the other Leo satellite consortia, Inmarsat also has plans to build its own satellite-based global hand-held mobile telephone service designated Project 21 which has been viewed by many as the main rival for Motorola's Iridium project.

Originally, Inmarsat had planned to base Project 21 on a $2bn Leo network. However, in a surprise decision at the end of July, the Leo plan was abandoned in favour of a network using fewer satellites placed in higher geostationary or intermediate orbits.

The decision to opt for a conventional system was taken after Inmarsat commissioned reports on the options and should enable the organisation to reduce its investment to about $1bn. Whether or not the decision will benefit Iridium and the other Leo groups is debatable.

On the one hand, it means Inmarsat has given up the advantages of Leo systems and could have implications for the type of service that it can offer and this could make it easier for Iridium and others to secure investor support for their Leo systems. On the other hand, it highlights the technical complexities of Leo systems and may enable Inmarsat to provide a cheaper service.

For Iridium these issues are likely to come to the fore when the initial funding runs out and it seeks another tranche of almost equal size within two years. The remaining 60 per cent of the project cost is expected to come from the debt market.

International investors will also want to be reassured that a number of other difficult issues have been resolved. Among these is the issue of frequency allocation. The World Administrative Radio Conference agreed in principle last year on which frequencies to allocate to Leos, but since then, the various consortia have been unable to agree how this allocation should be divided up.

The dispute has arisen because Iridium, unlike all its other rivals, plans to use time division multiple access (TDMA) technology – which does not permit frequency sharing.

In contrast, all the other proposed systems would use code division multiple access or spread spectrum technology which can share a block of frequencies.

The dispute has already delayed the timetable for licensing global mobile satellite systems in the US and will probably require a US Federal Communications Commission ruling on the issue.

The other main unresolved problem is about who should regulate global mobile satellite system operators – an issue which is exercising the European Commission and other would-be regulators.

■ VALUE-ADDED NETWORK SERVICES

Innovation on all fronts

Telecom service providers across the world are scrambling to deliver more value-added network services (Vans) to their corporate customers in a bid to win new business, reports Paul Taylor

THE liberalisation of telecommunications in the US – and now Europe – has led to greater competition between established network operators, new entrants and specialised niche market players. At the same time, technological advances, particularly the shift to digital systems, have provided service operators with fresh opportunities. The result is a proliferation of value-added services aimed at corporate customers.

For example, the digitalisation of BT's UK network has enabled the former PTT to offer a bundle of 'Star Services' – call-forwarding, call-waiting, caller identification and other special facilities which until recently have only been available of large companies' internal private branch exchanges (PBX).

Similarly, the introduction of competing GSM (Groupe Systeme Mobile) digital cellular networks across Europe will give network operators an opportunity to exploit a whole new range of features like GSM's short message facility which allows handsets fitted with liquid crystal screens to receive 160-character messages, twice as long as the typical alphanumeric radio-pager.

Mr Martin O'Byrne, managing director of Sema Group's telecom division which worked with Vodafone in the UK to develop the facility, believes that SMS and other features like it will provide network operators with an important way of differentiating their GSM networks.

Value-added services are already an important and rapidly growing source of revenues for the telecommunications industry. The US Commerce Department estimated that providers of value-added services including electronic data interchange (EDI), electronic mail, enhanced facsimile and managed network services in the US will earn around $8bn this year.

Across the Atlantic, Ovum, the technology consultancy, produces a continuous information service called "Vans Market Europe," which forecasts that the European market will almost treble in value from Ecu 4.05bn in 1991 to Ecu 11.6bn in 1996. *(see table).*

European market forecasts: value-added networks (Ecu millions)

	1991	1992	1993	1994	1995	1996	CAGR
Electronic data interchange	135	200	258	330	402	490	29%
Electronic mail	111	133	168	229	344	518	36%
Enhanced fax	6	15	31	64	136	290	117%
Frame relay	0	24	179	402	676	933	149%
Data network services	3,100	3,666	4,337	5,133	6,079	7,372	19%
Card authorisation	176	218	278	365	491	671	31%
Computerised reservations	116	246	463	610	724	819	48%
Videotex	409	470	547	631	719	811	15%
TOTAL	4,053	4,972	6,261	7,764	9,571	11,902	24%

CAGR indicates compound annual growth rate. Source: Ovum, 1993

Ovum says France is the biggest Vans market in Europe although its share of the total is declining as other markets (such as Germany) expand. France Telcom ranks as Europe's Vans market leader with an estimated 20 per cent of the market followed by Deutsche Bundespost Telekom (13 per cent), Telephonica (10 per cent), Reuters (7.5 per cent), BT (4.1 per cent) and IBM (3.7 per cent).

Data network services

Packet-switched and other data services were among the first true value-added services offered first in the US and subsequently in Europe.

The three most common data network services are telecommunications companies' public X.25 network, other vendors managed data network services and the big US and pan-European special purpose networks operated by companies like Reuters or consortia such as Swift.

Traditional X.25 packet-switched data networks provide a simple means for exchanging data between sites, but high prices and uncertainty about whether X.25 can meet current and future requirements for high bandwidth services like video-conferencing have led to the development of alternatives known as fast-packet switching services.

These include a fast packet technology called Asynchronous Transfer Mode (ATM) and frame relay, a slimmed-down version of X25 which is faster, simpler and cheaper than X.25 and provides an ideal interconnection service for local area networks (Lans).

In the United States, Frost and Sullivan, the market consultancy, has estimated that the market for fast packet switching services will rise from $74m in 1992 to $2bn by 1997.

Frame relay

Ovum expects frame relay to account for eight per cent of the European Vans market by 1996 - astonishing growth given that two years ago it was little more than another high-tech concept which emerged out of ISDN standardisation work.

Vendors in the US, where it is already well established, include the long distance carriers, local exchange carriers, local data specialists like Compuserve as well as internationally oriented managed network service providers like BT and Infonet. The market is now expanding quickly in Europe where most PTTs, together with AT&T Istel and a handful of data specialists, have either launched, or have plans to launch, frame relay services.

Ovum believes that in Europe 40 per cent of commercial sites with more than 100 employees will be using frame relay within five years of a national service being introduced.

Electronic data interchange (EDI)

EDI enables two organisations, usually customer and supplier, to exchange routine business documentation such as orders and invoices using standard electronic forms and their own computers linked through a service provider.

It is often a faster, cheaper and more reliable means of exchanging information than the traditional paper-based business transaction and can play a crucial role in automating a transaction chain.

These benefits have spurred growth in the use of EDI in the US, where it originated, and in the UK and the Netherlands which lead Europe in EDI usage.

Ovum expects the EDI market in Europe, including customer software and support, to grow from about Ecu 196m in 1992 to about Ecu 590m in 1997, a compound annual growth rate of 24 per cent.

The market leaders in Europe are IBM and Geis which have pan-European networks and services and International Network Services (INS, jointly owned by Geis and ICL) which dominates the market in the UK with an estimated 55 per cent market share.

Electronic mail

Unlike EDI, electronic mail is a non-interactive service based on sending computer originated messages across a telecommunications network. In Europe, electronic mail is already a significant and fast-expanding Vans market.

Ovum estimates that service providers earned Ecu 176m from electronic mail services last year and will earn almost ECu 1.5bn by 1997.

The largest share of the market is held by BT GNS (formerly Tymnet) followed by IBM, Unisource and Geis.

Ovum has identified seven other smaller market players including AT&T, Easylink, Mercury and Sprint. The UK is the largest electronic mail market in Europe.

Enhanced facsimile

Value-added fax services are now widely available in the US and Europe and have proved highly popular on both sides of the Atlantic.

Common features include broadcast fax to multiple destinations, automatic retry and deferred delivery.

Ovum says the the European market is expanding "spectacularly" and is set to become one of the larger Vans markets growing 12 fold to be worth Ecu 436m by 1997 compared to Ecu 36.3m last year.

Part of the reason for this substantial increase is the popularity of basic fax services coupled with a desire by corporate customers in particular to control and cut fax costs.

The PTT are among the most active suppliers of enhanced fax services however there are also a growing number of niche suppliers. In Europe, AT&T Easylink led the way in 1990 with its Enhanced Fax (E-Fax) service and Italcable launched its Multifax service the following year.

In the UK, which is the largest market in Europe, BT, Mercury and Sprint all offer enhanced fax services.

Among the other Vans videotext during the 1980s all the European PTTs followed BT's example and launched videotext services but while these have proved very popular in some markets such as France, they have been much slower to develop in other markets including the UK and Germany.

What is certain is that PTOs and others will continue to devise new value-added network services in an attempt to boost revenues, exploit the technology and retain their customers.

■ MOBILE COMMUNICATIONS

Subscriber base now 23 million

The world's fastest growing cellular market is the Asia-Pacific region, reports **Paul Taylor**

OVER the past 18 months Europe has provided the launchpad for the second generation of mobile telecommunications networks and a new range of services based on digital rather than analogue technology.

These new digital networks – labelled with acronyms like GSM, MCN and PCN (or PCS in the US) – promise to deliver a wide range of sophisticated new voice and data services to corporate, individual and residential customers and will help ensure that mobile telephony remains the fastest growing segment of the world telecommunications industry.

The 1980s saw the birth of mobile cellular telecommunications, but the 1990s have seen them blossom. According to *Mobile Communications*, the FT Newsletter, the worldwide cellular telephone subscriber base grew by more than 40 per cent to 23m last year.

In the US, which remains the biggest cellular market, subscriber numbers have grown from around a million in 1984 to over 12m today and the pace is still accelerating. Economic and Management Consultants International (ECMI), the Washington-based consultancy, has forecast 17.7m US subscribers by the end of 1995 and 25m a year later.

In western Europe the picture is similar with the subscriber base rising by almost 35 per cent to 7.25m in the 12 months to the end of July. CIT Research, the London-based technology consultancy, has predicted nearly 12m subscribers by the end of 1996 and 19.1m by the year 2000.

Growth is more difficult to predict in eastern Europe although a number of countries including Poland, Czechoslovakia and Bulgaria have plans for cellular systems and some like Hungary are leapfrogging the older analogue technology and moving directly to digital systems.

In some areas of the former Eastern Bloc, including eastern Germany, cellular systems provide a relatively cheap and effective alternative to the dilapidated, inadequate and unreliable fixed wire systems.

Licensing new cellular operators – sometimes including overseas companies like US West – also provides an opportunity to introduce competition. But the fastest growing cellular market is the Asia-Pacific region. The number of cellular subscribers in the largest markets grew by 50 per cent to 4m last year, and growth in the current year is again expected to outstrip that in Europe and the US.

Indeed, it is not just cellular radio services which are booming in region. Telepoint and paging services have also proved highly popular, particularly in Hong Kong where there are now three telepoint networks and more than 800,000 paging subscribers, matching the tally for the whole of the UK.

This worldwide surge in demand for mobile telecommunications services means that by the end of this decade half of all telephone calls worldwide are expected to originate or terminate on a mobile phone – and a growing proportion of those telephones will be operating on the new digital technology.

Digital technology provides some advantages over older analogue systems. Among these, digital mobile telephones can provide more reliable, clearer and more secure telecommunications – although at least for the moment these usually have to be offset by higher equipment costs.

But digital services are also intrinsically more "efficient" because by converting ordinary sound into computer code they can also pack at least 10 times as many calls into the same 'space' in the radio spectrum.

They are also easier to integrate with modern fixed telecommunications and data processing equipment and enable network operators and others to provide a wide range of value added customer services like messaging services and data transmission.

Western European cellular growth

This list shows the top 12 countries for subscriber growth in 1992, with the percentage growth share in each case. The number of subscribers in western Europe reached 5.98 million last year.

Germany, 410,414	30.4%
Italy, 213,302	15.8%
UK, 167,100	12.4%
Sweden, 87,788	6.5%
Spain, 72,256	5.4%
France, 63,605	4.7%
Finland, 63,816	4.7%
Austria, 57,339	4.3%
Netherlands, 49,509	3.7%
Norway, 48,495	3.6%
Switzerland, 40,504	3.0%
Denmark, 35,467	2.6%

Source: Financial Times, Mobile Communications Newsletter.

Although the US led way with the first generation of cellular services in the early 1980s, Europe has taken the lead in switch to digital systems in the 1990s. The driving force behind this move was the adoption in the mid-1980s of a pan-European digital telecommunications standard called GSM, (Groupe Speciale Mobile). The adoption of a single digital standard to provide a seamless cellular system across Europe has provided several key advantages including ensuring substantial economies of scale for infrastructure and handset equipment manufacturers.

New, sophisticated digital services are winning more subscribers

In contrast, in the US a dispute between network operators over two rival digital standards, one called time division multiple access (TDMA) and the other called code-division multiple access (CDMA) has delayed the widespread introduction of digital systems.

Twenty-three operators in 16 European countries committed themselves to building GSM networks, and more than another 20 countries around the world, including many in Asia, have adopted GSM as the basis for their next generation of cellular services.

The first GSM networks were launched 15 months ago in Germany, France and Denmark, and all the leading European Community states apart from Spain now have them in operation, although in some coverage is still patchy. GSM subscribers have accounted for about one third of all new subscribers to cellular networks in western Europe since then.

By the end of this year, Dataquest is forecasting that there will be 1.1m digital subscribers in Europe, growing to 8.31m by the end of 1996. The biggest market by far has been Germany which had over 500,000 subscribers to its two GSM networks by the end of July – 80 per cent of the European total.

Most countries have licensed two GSM network operators in contrast to the first generation of cellular analogue networks, which were mostly provided by the state-controlled PTTs except for the UK where two competing analogue cellular network operators were also licensed. These were Cellnet, in which BT, the former state monopoly operator, holds a 60 per cent stake, and Vodafone, the market leader.

Vodafone's GSM network is already operational while Cellnet plans to launch its system early next year, initially on a regional basis. Meanwhile, Vodafone has already has reached GSM roaming agreements with a number of other network operators overseas which enables GSM subscribers carrying their personal smartcards to make calls using a GSM phone anywhere in Europe.

For the moment, these GSM services are mostly being marketed as premium services for business customers. Another set of new digital services, being pioneered in the UK, are aimed at the broader consumer market, complimentary rather than rival to the traditional fixed line domestic telephone.

Last month the first of these new PCN (Personal Communications Network) services, dubbed One-2-One, was launched in the London area by a joint venture of Mercury Communications and US West. Initially, its coverage is confined to the M25 area around London, but there are plans to expand coverage rapidly. Next April a second PCN service is due to be launched by Hutchison Microtel, a subsidiary of Hutchison Telecom.

Meanwhile, Vodafone has launched a second national digital service called MetroDigital which exploits GSM technology. Like One-2-One Metro-Digital is designed to provide a lower-cost local digital portable telephone service for use mainly in urban areas.

The arrival of these new services has, as expected, already triggered an advertising blitz and fierce pricing war between operators in the UK and is also likely to lead to some repositioning of the two analogue networks – both Cellnet and Vodafone have recently revised their tariff structures.

Elsewhere in Europe, PCN services are likely to be developed in Germany, France and Spain. Some countries have also licensed digital call-only Telepoint services, such as Hutchison's Rabbit service in the UK and France Telecom's Be-Bop service in Paris.

GSM and the other new digital services will not replace the older analogue networks immediately – there will probably be a gradual migration to them. Similarly, although it is likely to be many years before mobile systems can compete directly on cost with fixed wire networks, new competition is likely to erode the premium that mobile telephony still commands.

George Black examines the 'mobile' market's prospects

Prices are crucial

THE mobile telephone market is one in which the stimulating effect of de-regulation looks almost incontrovertible. But it is less clear whether privatisation is essential for growth.

Telephone operators and authorities across Europe are still puzzling over exactly what are the key factors that drive the business.

In the UK, deregulation coupled with privatisation created competition and increased the market through price cuts. But in Germany, deregulation without privatisation has been enough to create growth; and in Italy the market has grown at over 30 per cent through price cuts, even in a monopoly situation.

In the Scandinavian countries, where mobile phones became very popular earlier than in the rest of Europe, cultural factors may have been as important as political or technological ones. A small population spread across a large area and a high proportion of people with two homes were among possible reasons for the phenomenon.

The introduction of new technology seems to have had little to do with market growth so far. UK dealers say that the price is the first question people ask, not whether the system will serve their needs.

Mr Alan Harper, business strategy director for Mercury One-2-One, the third company to enter the UK market, said there was no real evidence that digital quality affected buyers much at the moment.

Lower tariffs aimed at recruiting domestic subscribers have helped to increase the market in the past year in the UK, Italy and Germany. In the UK, it began with the launch of the Low Price service by Cellnet (British Telecom and Securicor) in November.

In five months the market doubled its size to about 1m users, and its growth rate from 40,000 connections a month to 80,000. This helped Cellnet to gain ground on its rival Vodafone; Vodafone now has about 1m customers, Cellnet 800,000. The two companies have been signing up new subscribers in about equal numbers in recent months.

Most market forecasts show between 8m and 10m UK users by the year 2000, although Vodafone expects only 5-6m. This is based on the assumptions of expansion mainly on the consumer side, falling entry-level cost and a wider range of consumer-targeted tariffs and services.

Margins are beginning to narrow for all the contestants; they may narrow further with the entry next year of a fourth competitor, Microtel, from Hutchison Whampoa of Hong Kong.

Mr Geoff Finch, director of corporate programmes and strategy for Cellnet, comments: "It is difficult to see that there will be much profitability for four players with 8-10m users and with the current range of services." However, he notes that the market had been outpacing expectations ever since 1983.

THERE have also been recent signs that the level of use by subscribers is beginning to rise. But the key question – to which the telephone companies do not yet know the answer – is whether further price cuts will trigger a higher level of use.

"We need to know people's behaviour patterns more precisely," says Mr Finch. "We are spending many hours trying to analyse them."

The launch of the Mercury One-2-One digital service by Cable & Wireless and US West during September was seen by the industry as a marketing success, especially the offer of free calls at off-peak times, to attract home users.

Mr Harper says that One-2-One's high-street distribution channels had increased their forecasts as a result and there was a temporary shortage of handsets.

The company had over 50,000 inquiries in the first month in response to its £10m advertising campaign. About 80 per cent of One-2-One's customers were first-time users and more than half of them were primarily domestic users.

Early reports are divided on whether digital technology offers any improvement over analog. The One-2-One service is at present confined to the area within the M25 motorway around London. Some users say it only works well close to the M25, where the base stations are located. Others say they have had good service a number of miles beyond the M25.

Technology enthusiasts insist that digital will prove itself superior and be better able to guarantee a good service. They predict that almost the whole market will go digital over the next 10 years.

Digital will be helped by the progress of the GSM (*Groupe Speciale Mobile*) pan-European standard. This should prove especially attractive to business users, because through it they can be contacted from Italy to Norway. It will be even more useful when mobile phones start to be used for data transmission.

In Germany, the creation of a duopoly has helped the market grow, even without the privatisation of Telekom, which is not expected until at least 1998. Last year the first competitor to Telekom, Mannesmann Mobilfunk, entered the market, using lower prices to catch up and overtake. In July Telekom set up a new private cellular company called DeTeMobil, which has offered cheaper rates and begun to retrieve Telekom's position.

The German market is growing much faster than had been expected. There are at present between 600,000 and 800,000 subscribers and there could be 10m by the year 2,000. A third supplier, E-Plus, will enter the market in 1994.

Italy now has 1m users, which puts it second to the UK in the European market. The monopoly of SIP, the public phone operator, has not prevented the market from growing fast.

During October the Italian government was expected to announce plans for allowing a second supplier into the market. Arguably, SIP's new lower off-peak rates targeted at the consumer market have been induced by the prospect of competition, for which the EC has been pushing. The entry of a competitor is expected to bring more price cuts and keep the market growing.

Mark Newman looks at the prospects for leading equipment suppliers

Pressure of technological change

Such is the buoyancy of the global telecoms industry that there is room for the leading suppliers to continue to expand, and for new entrepreneurial companies to break into their traditional businesses

EYEBROWS were raised when Northern Telecom announced a 26 per cent slump in profits for the first quarter of 1993. The Canadian group has emerged as a dynamic global player in the telecom equipment business in recent years, and as the only company with a remote chance of unseating Alcatel and American Telephone and Telegraph as the world's largest telecom equipment suppliers.

Northern Telecom, analysts believe, made the mistake of letting down those customers on whose business its global aspirations were founded.

Its profits slumped, analysts believe, because US regional telephone companies – the customers that Northern Telecom prised away from American Telephone and Telegraph in the 1980s – were unhappy with the quality of the the products and services it was delivering.

Northern Telecom is resilient and flexible enough to recover from the setback. But its problems illustrate the pressures that technological change and market liberalisation are putting on suppliers.

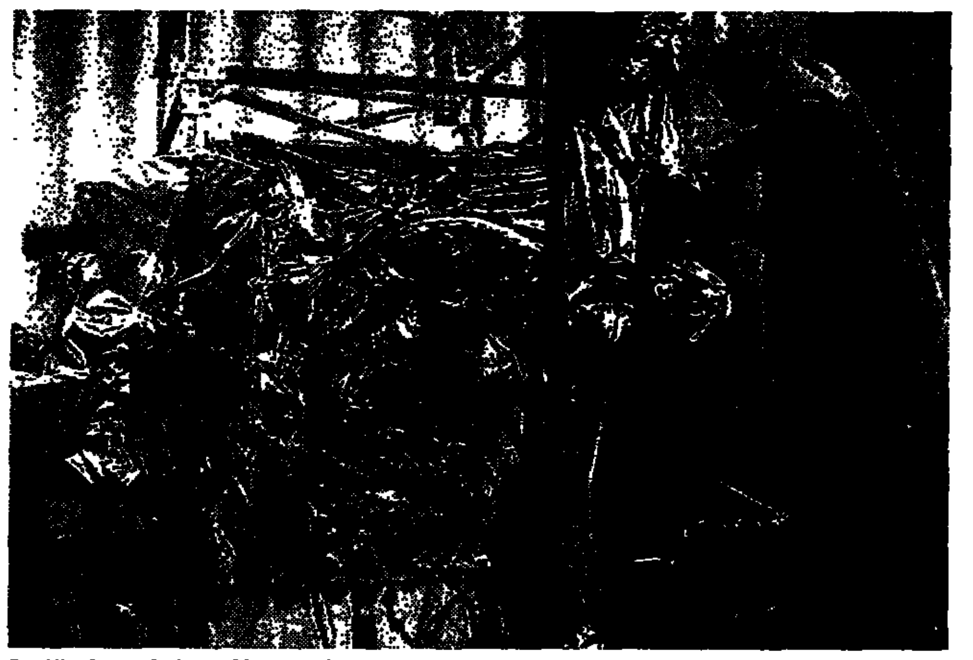
With the globalisation of the telecommunications industry, companies like Northern Telecom have to balance the twin objectives of expanding into new markets anri looking after existing customers.

Winning orders in markets which have traditionally been dominated by two, or possibly three companies – many of which are supported by their governments as national champions – has never been easy. To break into a foreign market, a supplier has traditionally had to form a joint venture, or buy a stake in one of the established suppliers.

Siemens became a leading supplier to British Telecom through the acquisition of a 40 per cent stake in GPT in 1989, and to US regional operators as part of the GPT deal which included a 50 per cent share in the former Plessey subsidiary Stromberg Carlson.

Nortel bought a 100 per cent stake in STC, the UK's last remaining independent supplier, in 1991, as a platform to expand into Europe, and has since taken a 20 per cent stake in Matra Communications in France. Talks with Bosch in Germany over a similar joint venture broke down in September. Alcatel owes its strength in transmission systems to the purchase of Rockwell Systems of the US in 1991, and in underseas cables, to the takeover of Nortel's cables business agreed in August. The French manufacturer also has a strong presence in the Italian market through Telettra, the former telecom arm of the car giant Fiat.

European equipment suppliers are attempting to form further strategic alliances with other suppliers. Pictured here is a German operative assembling telecom components at a Krone factory in Berlin. Picture by Tony Andrews



Satellites increasingly provide voice, data and video links across continents and oceans. Pictured above is a French engineer checking the giroscopes on the Eutelsat II F4 satellite in Cannes. Picture: Jacques Soller/AP

AT&T has a 40 per cent stake in Italian public network supplier Italtel, while Ericsson of Sweden owns a majority stakes in Schrack of Austria and a minority-stake in the Greek supplier Intracom.

In mobile communications, Ericsson has a 50 per cent stake in the UK company Orbitel and an 80 per cent stake in the former General Electric subsidiary, GE Mobile.

Mr John Dinsdale, a senior industry analyst at telecoms consultancy Dataquest, believes that supplier rationsalisation is far from over.

In particular, companies which have relied almost exclusively on contracts from state-controlled telephone operators, will be forced to team up with larger suppliers, he believes. Even though most telephone operators are still state-owned, many now operate independently from ministerial control and gone are the days when they were expected to award contracts to domestic suppliers.

But the conventional wisdom that there would be no more than six suppliers of public telecommunications systems by the year 2000 now seems misguided. Telecoms is expanding so quickly, and in so many different directions, that it would inconceivable for a handful of suppliers to control the market.

To understand the forces that determine the structure of the telecoms supply business, equipment can be divided into two overlapping categories.

One category is stable both in terms of technology and market share, while in the second, technology is evolving so quickly that no supplier can feel totally secure.

Public switch and transmission systems

The first – and by far the larger of the two – is public switch and transmission systems for conventional telephone networks.

In Europe and North America, the market for public switches has largely been played out. Operators have already digitalised their long-distance networks, and have moved onto the more arduous, less rewarding task of digitalising local networks. They have already selected their preferred suppliers – in many cases, and there are few opportunities for newcomers.

The most attractive opportunities for suppliers of public switches are in Asia, and in particular, China.

This year, China will buy nine million lines of which Alcatel will deliver five million lines, and the balance will be divided between Ericsson, Siemens, AT&T, Nortel and NEC.

India, the continent's next largest growth market, will buy two million lines of public switching equipemnt a year until the end of the decade, and has already chosen Siemens, Ericsson, Fujitsu, Alcatel and AT&T as preferred suppliers.

Other growth regions include eastern Europe where Siemens has been active with the setting up of nine joint ventures in seven countries.

Financing telecoms infrastructure: EBRD operations approved

Listed here is a brief description of each project and its value, with investment by the European Bank for Reconstruction and Development shown in brackets:

- ROMANIAN TELECOMS – digital overlay network, $550m (EBRD: $170m).
- HUNGARIAN TELECOMS – digital overlay network, village programme, $240m, (EBRD $62m).
- HUNGARY – Westel Radiotelefon KFT: cellular project, $82m. (EBRD, $10m).
- POLAND – Polskie Telefonia Komorkowa; cellular project; $180m (EBRD, $40m).
- BELARUS: Belarus International Telecoms: international access, local and regional; $44m; (EBRD, $38m).
- POLAND – Warsaw Telecoms: network development; $438m; (EBRD, $100m).
- REGIONAL – Eurovision network expansion, earth stations for TV transmission; $14m; (EBRD, $14m).
- BULGARIA TELECOMS: digital overlay network; $230m; (EBRD, $38m).
- RUSSIA – Sovintel: international gateway, $12m; (EBRD, $7m).
- CZECH REPUBLIC: Eurotel-Czech, cellular projects; $50m; (EBRD, $11m).
- SLOVAK REPUBLIC: cellular developments, $43m; (EBRD, $8m).
- RUSSIA – Macomnet, fibre-optic cables, $15m; (EBRD, $4m).
- ALBANIA TELECOMS – International access: $33m; (EBRD, $9m).

SLOVAK TELECOMS – digital overlay system, $32m, (EBRD, $53m).

- TOTAL: $2,728m (EBRD $646m).

Cellular systems, voice and data services

The second category groups together cellular telephone systems, data communications networks, high capacity broadband networks and private systems for both voice and data services.

Technology is changing so fast in these areas that opportunities are available for new companies to compete with the established suppliers.

Ericsson and Motorola are firmly established as the leading suppliers of cellular telephone networks, while Motorola and Nokia of Finland are the largest suppliers of cellular telephones.

Mobile communications is the fastest growing sector of the equipment supply business, and as consumer electronics companies diversify into mobile telephones, they will increasingly compete with telecommunications companies. Sony, for example, is supplying telephones to UK cellular telephone operator Cellnet which, for the last year, has been targetting the consumer market.

The UK company Amstrad which is better known for supplying budget PCs, is set to become a mobile telephone supplier following its takeover last month of Danish manufacturer, Dancall.

In the dynamic field of data communications, the arrival of US networking companies is threatening to knock leading equipment suppliers off their perch.

Systems are increasingly based on sophisticated computer software, and networking companies like Novell, Cisco Systems and Synoptics, are bringing products to the market quicker than the largest companies with a background in telecommunications.

The leading equipment manufacturers are hoping that telephone operators will commit heavily to broadband networks – high capacity systems that can transmit huge volume of voice, data and image information. Operators are testing broadband networks based around a switch technology called Asynchronous Transer Mode, and transmission systems using Synchronous Digital Kierarchy Technology (SDH). But the demand from users is hard to predict and operators are conducting technical and commercial trials before committing themselves to massive investment programmes in broadband.

Such is the buoyancy of the global telecommunications industry that there is room for the leading suppliers to continue to expand, and for new entrepreneurial companies to break into their traditional businesses.

For established suppliers such as Nortel, a balance must be struck between cultivating new customer relationships and checking up on old friends.

The author is editor of the FT newsletter, Telecom Markets.

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■ EQUIPMENT SUPPLIES

There is no quick financial 'fix'

There is overwhelming evidence that high quality telecom networks are essential for economic growth in developing countries, reports **Mark Newman**

IN a recent survey of business managers in central and eastern Europe carried out by the Organisation for Economic Co-operation and Development, 44 per cent of respondents said that poor quality telecommunications links were the main barrier to exports to the west, and 53 per cent cited it as the the biggest obstacle to exports to neigbouring countries.

Telecommunications modernisation programmes were neglected by Communist governments and international links, in particular, were hopelessly inadequate when eastern Europe opened to the west in 1989 and 1990.

OECD figures show a strong correlation between GDP per capita and telephone line penetration across central and eastern Europe. GDP per capital rises by between $600 and $1,000 for every five per cent increase in telephone line penetration.

Improving trunk ad international telephone links was immediately a priority for the new democracies. But finding the money to pay for new telephone lines has been a big obstacle which telephone operators, equipment suppliers, financiers and teams of western consultants, are struggling even now to overcome.

When telephone operators were state-owned organisations operating under ministerial control, financing for telecommunications development was provided directly from state budgets.

"In the past, finance was not a serious issue for telecommunications operators," according to Tim Nulty, a senior World Bak economist.

"Politicians set the goals and, having done so, were obliged to provide the finance and the necessary inputs. Managers in the telecommunications operators had little responsibility. They merely translated the targets 'delivered from the top' into detailed programmes for installation and lists of required inputs. It was the government's responsibility to see that the necessary goods ad finance were available."

But the dismantling of central planning, and the enormous investments required to make up for the years of neglect, means that the telecommunications operators need to look elsewhere for finance.

THE World Bank, the European Investment Bank, and the European Bank of Reconstruction and Development, EBRD, have taken the lead in securing finace for telecommunications projects in eastern Europe. They have raised money for international gateways, cellular telephone networks ad digital trunk backbone networks. All are essential for international business, but less rewarding process of upgrading ad extending the basic telephone network has not even started in a number of countries.

"The problem," according to one western banker, "is marketing projects as an attractive investment opportunity."

Mr Clell Harral, a deputy director for infrastructure, energy and environment at the EBRD, says there are a number of reasons why investors are cautious about project finance – schemes in which debt finance is secured solely on revenues from the investment itself.

"The country risk, the foreign exchange risk and the instability of the government regime with respect to regulatory policies, the greater uncertainties of demand forecasts, contractual counter-party credit risks and uncertainties regarding the enforceability of legal structures" are all significant risks that have to be dealt with, Mr Harral says.

As a result, potential investors have shied away from project finance – "there's been a lot of talk about project finance and not much action," according to one leading banker.

In eastern Europe, the EBRD is most optimistic about overcoming these obstacles in Hungary, Poland ad the Czech Republic where telephone operators' activities are being separated from the ministries and modest tariff reform programmes are under way. Build-operate-transfer (BOT) project finance, for example, "is a serious option today" in these countries, adds Mr Harral.

A different picture is emerging in south-east Asia where telephone operators are finding it relatively easy to finance infrastructure projects – "all forms of investors are willing to invest in countries such as Thailand, Korea and Malaysia, according to a senior economist in one commercial bank.

Equity investment, supplier finance and project finance are all available, which means that telephone operators can go for the best deal, he adds.

One of the most imaginative financing packages was put together in Thailand where two international consortia are installing telephone lines in Bangkok and outlying rural areas in return for a share in line revenues.

TelecomAsia, which is majority-owned by Charoen Pokphand Group, has a 25-year build-operate-transfer agreement with the Telephone Organisation of Thailand, to instal 2m phone lines in Bangkok. The project is being managed by US regional telephone company, Nynex.

Japanese domestic telephone operate Nippon Telegraph and Telephone, meanwhile, has a stake in the majority Thai-owned Thai Telephone and Telecommunications, which has a 25-year BOT agreement to instal a million provincial telephone lines.

The most ambitious modernisation programmes are in India and China. Ian MacLeod, a telecommunications equipment industry analyst at Natwest Sellier in Paris, says that China will buy 9m telephone lines in 1993.

If China meets its target of increasing telephone line penetration from two per cent to 10 per cent by the year 2000, it will need to buy 13m lines a year for the rest of the decade, Mr MacLeod adds.

CHINA is paying for telephone lines in hard currency out of its big trade surplus. But it will inevitably seek to open lines of finance in north America and western Europe, many analysts believe.

Central control of telecom operations will have to be relaxed if China wants private investors to contribute to the modernisation programme, according to one western banker.

"If they try to do it in a monolithic way, they wouldn't have the money nad no one abroad will lend it to them," he says.

"What they have to do – and what they are doing – is opening up avenues for smaller operators."

Similarly, India may have to reform the telecommunications sector to meet its target of installing two million lines a year until the year 2000.

Importing telephone lines has been made easier by the willingness of leading suppliers to accept payment in the newly-convertible rupee. They are also in discussions about supplier finance, but this will only meet part of the total financing requirement.

Developing countries understand the importance of telecoms to their economies. But financing modernisation programmes is a long, arduous task.

There is no quick financial fix and developing countries will have to continue to rely heavily on internally-generated funds from high-margin businesses such as mobile communications and international services to finance basic infrastructure projects.

Financing telecoms infrastructure: financing options

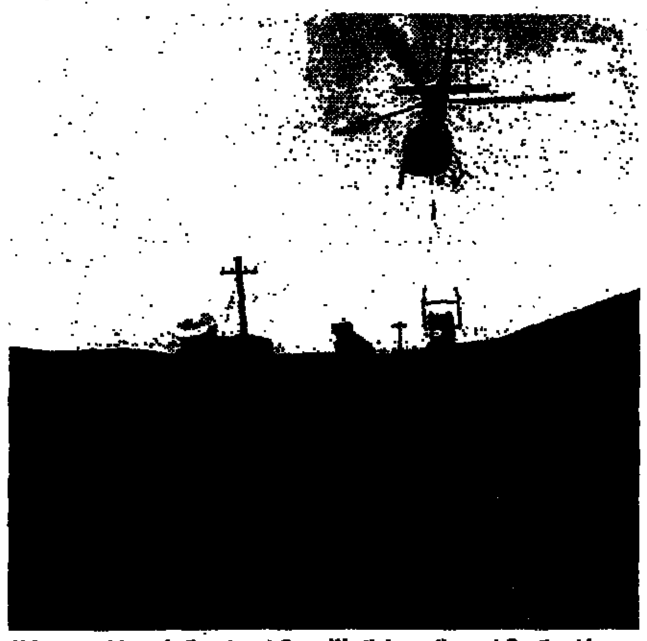
The details here are from the European Bank for Reconstruction and Development, EBRD. They outline the financing options at four stages of infrastructure development. The primary source of finance must be internal cash generation. External finance can be mobilised as follows:

STAGE ONE: public telephone operator under ministry control:
- EBRD: sovereign loans.
- Private and bilateral sources: supplier and export credit.

STAGE TWO: separation of telecoms from other activities:
- EBRD: Sovereign loans, lender of record.
- Commercial sources of finance: syndicated loans; project finance.
- Private and bilateral sources: supplier and export credit.

STAGE THREE: corporatisation:
- EBRD: non-guaranteed loans, lender of record, guarantees, project finance equity.
- Commercial sources of finance: syndicated loans; project finance.
- Private and bilateral sources: supplier and export credit; project finance; equity.

STAGE FOUR: privatisation:
- EBRD: commercial loans, underwriting, guarantees, equity.
- Commercial sources: commercial loans.
- Private and bilateral sources: supplier and export credit; project finance; equity.



Airborne cable: a helicopter at Cape Wrath in north-west Scotland is used to help lay 11 miles of new optical fibre telephone cable

Cable duct inspection, 35 feet below ground at Maidenhead

A digital telephone exchange, donated and installed free of charge by BT's Westward District is helping to save lives at a remote Kenyan hospital. In the past, Chogoria hospital, with its widespread wards, had to send runners to fetch doctors – now it has an 80-phone system. BT engineer Ian Firkins, above left, is pictured checking new lines.

Paul Taylor examines developments in private network systems and services

Integration is the key

THE LIBERALISATION of telecommunications regimes has accelerated the pace of change in the provision of private network systems and services.

At the same time, new technologies are being developed and many companies are considering alternatives to building, operating and maintaining their own dedicated networks.

The market at stake is huge. According to some estimates the combined European telecoms equipment and services market will be worth \$300bn by 1996, *(see pages 14 and 15 of this survey).*

The world market equipment alone amounts to \$128bn a year, with the US accounting for \$44.8bn (35 per cent), and the EC for \$30.7bn (24 per cent) – and within these totals the market for private branch exchanges (PBXs) remains one of the largest sectors.

However, the advent of digital technology and the new rules of competition have created a much wider range of network equipment, service and supplier options. Customers no longer have to accept separate and inflexible approaches to their voice and data transmission requirements.

Today's corporate network needs to be flexible, upgradeable and expandable in order to accommodate the changing demands which are likely to be placed on it. The network may well be a hybrid, using private point-to-point links for steady high-volume and high-security traffic and dial-up bandwidth services to cope with traffic peaks and special requirements.

Increasingly, it needs to support integrated voice and data communications as well as new applications, such as video-conferencing.

This requirement for integration poses a challenge for the traditional private network and the manufacturers of PBX equipment, in particular. As the New Jersey-based Insight Research group noted in a recent report, the PBX industry "is at a crossroads." After three years, during which almost all PBX suppliers made losses Insight suggests that "two major obstacles confront the entire industry" – how to make money, and how to re-ignite the enthusiasm the PBX industry enjoyed in the early 1980s.

In particular, Insight warns that PBX manufacturers face a challenge from data communications equipment vendors who are begining to offer their local area network (Lan) customers true voice and data integration products.

This challenge will be re-inforced by emerging new technologies like ATM (Asynchronous Transfer Mode), which combines the best features of multiplexing and cell switching to mix high-speed voice, data and video traffic, and Frame relay which uses high-speed packet switching technology to handle data traffic between sites.

Today's PBX industry is 'at a crossroads,' say market analysts

However, perhaps the biggest change under way is the move towards managed network services (MNS), virtual private networks (VPNs) and "outsourcing,"*(see page 7 in this survey).*

Beginning in the 1970s, many large companies built their own dedicated telecommunications networks for voice and data traffic using leased lines. But now many large customers are either asking outsiders to manage their own internal networks and facilities, or buying-in the sophisticated network services which they need.

This year MNS are expected to account for 16 per cent of the total European market for Value-Added Network Services (Vans), according to Datamonitor, the London-based technology research group, which also predicts that the proportion will "rise dramatically as the key product segments such as network outsourcing grow at rates of up to 50 per cent annually for the next few years."

One of the most popular "bought-in" services in the US is "Centrex," where the features of a conventional company PBX – such as desk-to-desk and short code dialing – are provided by the network operator who partitions off part of the public telephone exchange to act as a customer's office telephone system. The customer pays a regular fixed sum for the exchange equipment and a variable increment based on usage, but avoids the need for substantial capital investment.

Centrex services have proved particularly popular in the US where they have been available since the early 1980s and where Insight Research notes they have been actively marketed by the regional bell operating companies as a "cost-effective, hassle-free alternative to PBXs, especially to the small and medium-sized company that cannot afford the overhead of a dedicated telecommunications staff."

In the case of MNS, most – or all – of the day-to-day running of a corporate voice or data network (Managed Data Network) is undertaken by an outside contractor. In the UK, managed network services are also available from the two domestic network operators as well as international competitors like AT&T of the US.

"Customers are usually looking for a long-term but flexible relationship," says Mr David Sexton, customer director for MNS at Mercury.

Several key factors help explain the recent rapid growth in MNS:

□ First: the cost of private leased circuits has been increased in recent years as a result of tariff re-balancing in the late 1980s which changes the economics of private networks.

□ Second: many customers are under-going rapid change themselves which often requires substantial re-oganisation of telecommunications services without disruption.

□ Third: technological advances means rapid change or "churn" in customer premises equipment.

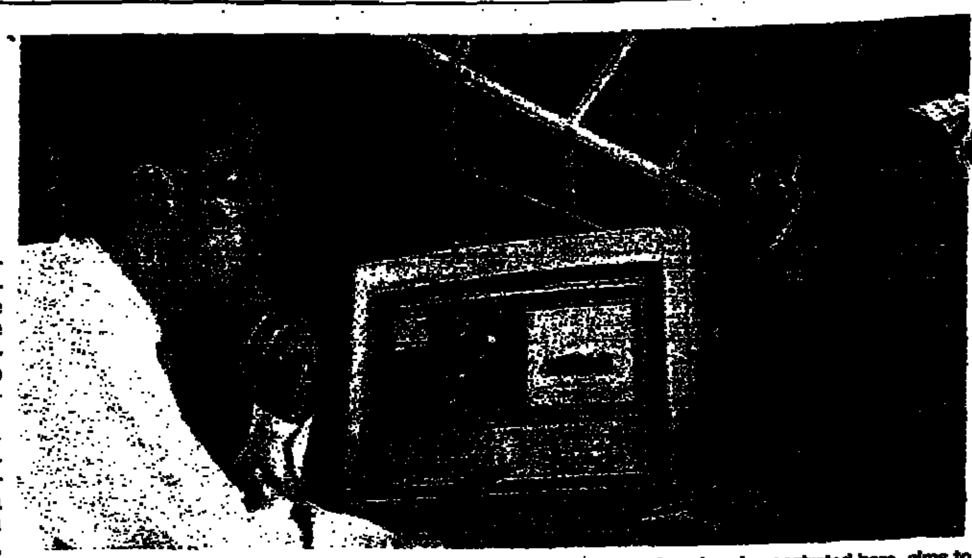
Virtual Private Networks (VPNs) represent another, even more flexible alternative to the private network. VPNs provide the features and functionality of a private network based on leased circuits, with the flexibility and security of the public switched telephone networks – on a domestic or international basis.

This eliminates the need for continual capital investment in new technology and means that capacity is available on demand and paid for on a usage basis. The simplest VPN simply provides a business customer with a way to link the switchboards on different sites – even if they are in different countries – without having the expense of installing and running their own private network.

More sophisticated VPNs allow customers take advantage of the embedded intelligence in the network and, for example, "dial-up" additional bandwidth (line capacity) when it is required for a video-conference or to accommodate a peak during the day in electronic mail messages. Perhaps most significantly, a VPN can be reconfigured rapidly to meet the customer's changing requirements.

In the US, all three long distance carriers, AT&T, MCI and US Sprint, introduced voice VPN services in the mid-1980s and almost all of the top 1,000 US companies use the service. Similarly, in the UK, the increasing competition between Mercury and BT for big business customers has helped stimulate interest in VPNs.

For some companies the nature of their telecom traffic may mean that they continue to use private networks for their most sensitive data or on routes where very high volumes of traffic are regularly transmitted, but use a managed network or a VPN for other traffic.



International network management: the Alcatel 4750 network management centre, demonstrated here, aims to offer flexible, seamless management, even with ISDN capability and with multivendor networks

■ PERSONAL NUMBERS

The shape of things to come

One day, everyone may be given a telecoms number at birth, as they get a national insurance number today, reports **Andrew Adonis**

BY THE turn of the century, business cards listing a veritable directory of phone and fax numbers could be a thing of the past.

Instead, most business people may have just one number – a "personal number" connecting callers to whichever telephone, fax or messaging service its "owner" chooses at any given time.

Eventually, everyone might get a telecoms number at birth, just as in the UK they are given a national insurance number today, but for the foreseeable future "personal numbering" will be a premium-rate service, geared mainly at companies, executives and others on the move and wanting to be contactable anywhere, anytime.

The technology for the task is largely in place, with the development of intelligent networks which can "recognise" different types of call, refer to databases, and then direct calls – and charge for them – in a pre-determined fashion.

There is strong support for personal numbering from regulatory authorities, which are keen to boost competition between operators to provide new value-added services. In the UK, Oftel, the industry regulator, proposes to devote a large block of numbers for personal numbering. Prefixed by the digits '07', they would come on stream when the existing numbering régime is reformed in 1995.

A recent Oftel policy statement highlighted personal numbering "an area of rapid growth" in the next few years. It pointed to the US, where AT&T has launched a service using '700' numbers and the Federal Communications Commission has floated the idea that the '500' number range be generally used for personal communications services.

The expense of the operation is widely thought to make it unviable. When Oftel published its statement on numbering this summer, a BT spokesman dismissed the idea as "way, way off... It's like Concorde," he said. "You can build it, but that doesn't mean many people will be able to afford to fly in it."

With a \$7 a month subscription, AT&T's "EasyReach" service is not unduly expensive. Two companies are planning to launch similar services in the UK – Goodall Personal Numbering (GPN), which will brand a personal numbering service under the name "Flextel" from the end of this year; and "Numbering Viewed Worldwide", which plans to enter the market next year. Neither is toying with tariffs that will unduly frighten those anxious for their services.

Goodall has two separate services in mind. First, a "low mobility" service geared at companies which want a single number they can keep when they move. Second, a "high mobility" personal number which individuals can take around with them day by day. Numbering Viewed Worldwide will concentrate on the second service. Mr Will Goodall, GPN's founder, believes the low mobility services will have most impact in the short term – "the damage done to businesses by number changes is enormous," he says. "Many will be prepared to pay a small premium for the security of being able to move all or part of their operation around without forfeiting their number."

He downplays the immediate potential of "high mobility" services. "If people want day-by-day number portability, cellular services are doing most of the job already," he says.

In any case, there are serious practical difficulties in making a "high mobility" service viable. They are highlighted by Dr Michael Grant of Analysys, the Cambridge-based telecoms consultancy.

The key problem is to find a quick and simple way for the "owner" of the database to update it with his/her movements on a day-by-day basis. AT&T's "EasyReach" relies on real-time updating, requiring users to phone a database each time they want their number transferred – unless they follow a pre-set daily pattern. This can be an off-putting process.

As Dr Grant says of existing solutions: "The user is required to inform the system of home, office and mobile telephone numbers, manage a list of preferred and barred caller numbers, specify re-routing times, and make *ad hoc* changes to the profile as the daily work pattern changes from its normal routine."

Moreover, "informing the system" generally requires a phone call, the entering of an account code and PIN number and then the number of the terminal on which the user wishes to register.

THE search is on for new technological solutions to the problem. Dr Grant highlights five which have potential:

- Calling line identification, being introduced in many networks around the world, which greatly reduces the time taken to register on a terminal.
- The DTMF "tone card" concept, which could automate both the dialling of the service provider and the entering of the account number.
- Voice recognition, which could be used to speed up the inter-action.
- Subscriber identity module (SIM) cards – as already with phones on GSM digital cellular networks – which could be used to separate handsets from numbers, making all handsets docking stations for mobile terminals.
- Turning phones "on" and "off", to give signals to the network – as, again, do mobile phones already – as to whether the subscriber is there, and routing calls accordingly.

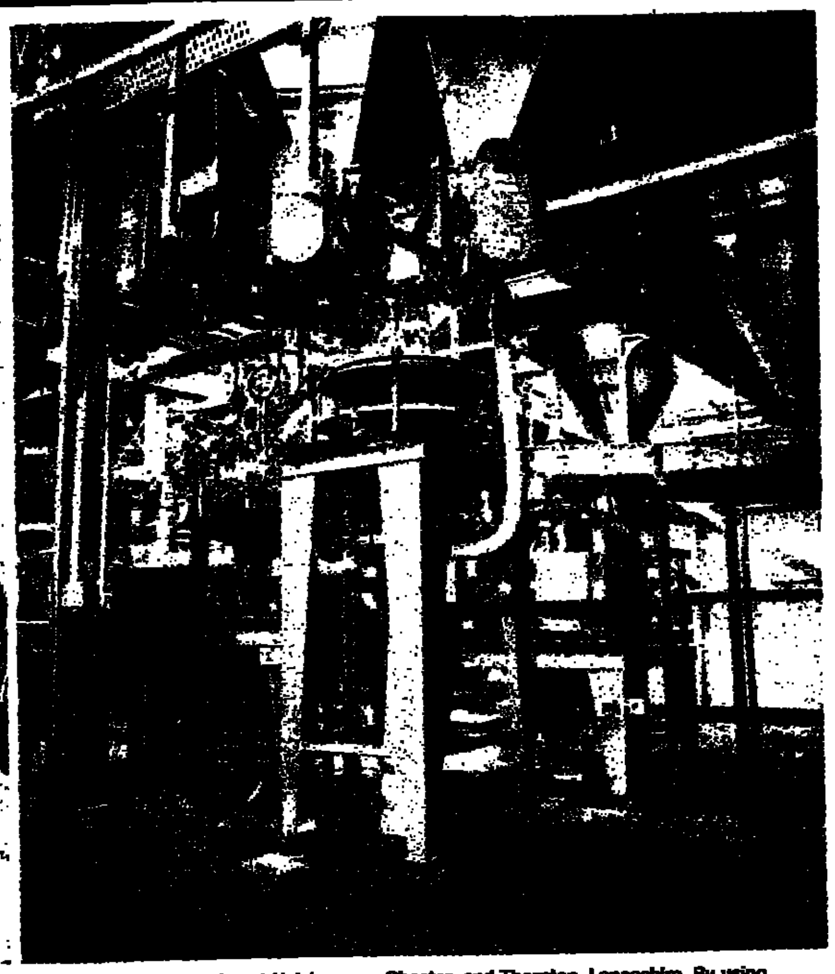
Of the five, the SIM concept is the most path-breaking. Once the people, not the phones, have the numbers, the era of mobile communications will have truly arrived.

FINANCIAL TIMES SURVEY

COMPUTERS IN MANUFACTURING

Monday October 18 1993

With Cadcam – computer-aided design and manufacturing – reaching new levels of sophistication, the challenge for customers is to find what is right for them rather than pay for what the equipment vendors want them to buy, writes **Andrew Baxter**

A processing machine at EVC Compounds, a joint venture between ICI and Enichem, with a £50m turnover and factories at Helsby, near Chester, and Thornton, Lancashire. By using Movex information technology, EVC has cut its IT budget by half while reducing stocks by 33 per cent. The company now employs only two people in its IT department

This time IT has to work

THERE CAN be few markets where the disappointments of the past are so closely matched by the promise for the future as that of the computers and information technology products used in manufacturing.

Customers faced with an increasingly complex array of technologies are trying to forget the frustrations of the mid-to-late 1980s – when many of the products they bought simply failed to live up to expectations.

Now, in the more straitened circumstances of the 1990s when all capital investments have to be scrutinised closely, especially in the recession-hit engineering sector, advances in technology promise to make real some of the illusory gains of the past.

That, at least, is what IT vendors will be hoping to prove at the Computers in Manufacturing Show (CIM '93), which runs from tomorrow until Thursday at Birmingham's National Exhibition Centre – under the motto: "Squeeze harder."

Behind the optimism lies the conviction that their customers have learnt from the past, too. No longer dazzled by technology, manufacturers are learning the hard way that they need a business strategy that is supported and enhanced by IT, rather than vice versa.

The state of the current market place is revealed by recent studies, backed up by the views of leading vendors, which show spending on IT continuing to rise even as customers try to achieve value for money.

In July, the annual survey by Price Waterhouse Management Consultants of spending on IT suggested it had slipped out of the grip of British managers and might be racing away out of control.

It found that spending had risen by 9 per cent last year, bringing the increase in the past three years to nearly 50 per cent. British managers had yet to tackle effectively the problem of how to make the computer work more cheaply for their companies, it said.

The Price Waterhouse survey covered all UK businesses and included the public sector, but figures produced by Benchmark for CIM '93 show that spending on IT in the manufacturing sector has also continued to rise.

Total spending by manufacturers on computers for manufacturing applications rose from £1.37bn in 1992-93 to a projected £1.41bn in the 12 months from this summer, with engineering industries accounting for £780m and process industries for £628m.

Further research by Benchmark during the summer revealed what Mr John Puttick, European director of manufacturing for PA Consulting Group, sees as a communication gap between IT suppliers and manufacturers that is holding back UK industry.

The research showed that manufacturers remained unconvinced and distrustful of the benefits of IT and reverted to manual methods during critical production runs. Some 43 per cent of managers polled still believed that manual methods were more suited to control shopfloor processes and 21 per cent were convinced that manual methods were better for scheduling production.

Mr Puttick says manufacturers are "so caught up in the chaotic world of the factory floor that they are unable to define their problems adequately, let alone explain them to anyone else. Meanwhile, IT suppliers do not fully understand the manufacturing world and are so sales-oriented that they are not focusing on the real problem."

On top of that, manufacturers clearly worry about what the spending on IT has achieved. Mr John Farrant, consultant at IBM Consulting Group, says that over the past 10 years there has been a dramatic increase in the performance of IT systems, with the change from mainframes to personal computers and now workstations, and "staggering" development in Cadcam technology.

"But over the last couple of years, people have been saying: 'I've invested, I've bought the technology, but I'm not sure it's doing anything for me'."

A few years back, he says, potential purchasers of a new Cad system would be "literally bedazzled" by the vendor's presentation, and would burst into spontaneous applause. "But the recession has changed all that. People are saying that they must quantify the benefits of a new investment."

Mr Farrant contrasts the hard-nosed approach to IT buying in the US – where it is a "business-led decision, not driven by the technology" – to the more experimental approach in the UK, where industry has tended to use technology to see what the benefits are.

But some see another contrast between attitudes in the UK and those of continental Europe. Mr Ray Krienke, sales co-ordinator for European manufacturing industry at the Cadcam supplier Intergraph, says UK manufacturers have always tried to get value for money, because of the cyclical nature of the UK market.

"In Germany, it has been the other extreme – companies have stuck with a system if it did a job, and expanded it regularly every year. But in the past nine months, that attitude has changed because of the recession, and capital spending has halted or been called into question."

Across Europe as a whole, he says, most manufacturers have invested significantly in Cadcam. "They have speeded up a function or a department, and they have made a return, but so has everyone else.

"Now they are trying to take another step forward on return on investment. They can continue increasing efficiency through departmental solutions, and can also recognise the huge benefits from sharing data across departments."

It is in this area, integrating through IT all the functions involved in product development and manufacturing, that most progress still has to be made, and where the future competitive advantages from spending on IT could well be derived.

Mr Farrant sees the main challenge for IT vendors as helping companies to integrate the engineering world with that of manufacturing itself which, after going through several painful phases, is about 15 years ahead of engineering in terms of the control offered by IT over business functions.

He suggests that, if companies wish to reduce the cost of the design phase in product development – often estimated to be as much as 80 per cent of the total – they need to ensure that the design engineer has all the relevant information available about the product and its business context, rather than just its design data. "This is where artificial intelligence can help enormously," he says.

The desire by manufacturers to ensure that information is available throughout the business also points to an increasing role for powerful databases and their related applications software, as illustrated by the experience of Ford Electronics in Spain (see Page 2).

The need for companies to "pull things together" via their IT investments also convinces Mr Krienke that there are still good opportunities in relatively mature industrial sectors such as automotive and aerospace industries.

"Their huge investments in systems have delivered some of the benefits they expected but not all. Now they are asking whether there is a better way of doing things. So they are looking at systems that can help them see the big picture as well as give them more 'functionality' at departmental level."

From the customer's point of view, though, the big picture also involves having a clear idea of how the business works before using IT. Then the paybacks that have proved unachievable in the past can become a reality.

New products on the market reflect changes in fashion and demand, writes **Mike Farish**

Focus switches to integration

THE SUPPLY of advanced design and manufacturing systems is not quite a fashion industry. But there are distinct trends in the relative importance attached to particular business issues and their relevant technological "solutions".

This reflects the mix of real demand from manufacturing industry, advances in enabling technologies and a dash of marketing "push" from vendor companies.

Just a few years ago the areas of emphasis included:

- linking CAD and CAM so that the shopfloor made exactly what the design department wanted;
- networking machine tools through the emerging MAP (Manufacturing Automation Protocol) communications standard;
- establishing effective standardised means of transferring CAD data between software programs from different vendors;
- porting formerly mainframe-based software systems onto networks of "desktop" workstations and even PCs;
- slashing the price/performance ratios of hardware platforms.

None of these issues has ceased to be relevant, but their provision is increasingly taken for granted as other topics become the focus for "leading edge" products.

Now the most urgent requirements are seen to include:

- the complete integration of design and manufacturing data with business functions so that the ordering, manufacturing and despatch of products are all part of a seamless process controlled by a single database;
- ensuring that such integration is based on accepted OSI (Open Systems Interconnection) standards rather than proprietary links, enabling users to mix and match software systems according to requirements;
- providing software systems that can support new forms of organisation and procedures, such as cellular and Just-in-Time (JIT) manufacturing.

Products that attempt to achieve company-wide integration of business and technical information are known generically as Enterprise Resource Planning (ERP) systems, or sometimes as Customer Oriented Manufacturing Management Systems (COMMS).

They exploit a range of up-to-date computer technologies such as graphical user interfaces, fourth generation languages (4GLs), relational databases and client/server hardware configurations.

They aim to allow access to commercial and technical data generated by multi-site, multinational, functionally-diverse manufacturing operations and to facilitate effective control of key issues such as supply chain management.

Such products have started to come onto the market only within the last year or so, but are represented at CIM '93. One example is the JIT Enterprise software package already used by some 50 companies in the US and now being introduced to the European market by Fourth Shift UK.

Computervision's first total product modeller runs on Hewlett-Packard's HP 9000 series 700 workstation

The product incorporates the Oracle relational database and has over 50 integrated application modules. The software is explicitly described as an ERP product and is intended to support "lean," JIT-type manufacturing procedures.

Another ERP product is the Control Manufacturing system from Cincom, first launched in March this year. The company is bringing to CIM '93 a new version of the product, Control Manufacturing 7.3, which it describes as a significant step towards its aim of "full Open Systems implementation in 1994".

One of the capabilities ERP offers is multi-language input and Cincom says options already available are English, French, German, Swedish, Italian, Spanish, kanji and Portuguese. With an eye to the emerging eastern European market Czech is under development.

The Manman/X system from ASK Computer Systems is a similar product that now boasts over 130 user sites worldwide since its launch just over a year ago. A new version, Release 2.1, to be introduced at the show, demonstrates ERP's ability to cope with local demands through an option that can cope with Canadian tax laws.

Ultimately, ERP is expected to sound the death-knell of the well-established MRPII (Manufacturing Resource Planning) systems currently used to integrate business and technical data.

But MRPII is likely to be around for some time yet, though there are signs that systems are evolving towards the ERP model. The new Impcon 2000 MRPII system being introduced by AT&T Istel, for instance, claims to combine a "4GL user interface with proven 3GL MRPII functionality".

Elsewhere, several other products emphasise the drive towards integration, though in more specialised applications. Cimtel is introducing CIM-Trak to "close the loop" between its existing engineering data management and process planning packages through production, operator and quality performance monitoring.

Cimlinc will be demonstrating how its Linkage networking product can help integrate diverse application packages from different vendors. At CIM '93 it will be implementing a network in which data will be ported between CAD software from UK vendor Radan Computational and the Supercapes process planning package marketed by PS Industry.

On the hardware front Silicon Graphics will be demonstrating its recently introduced range of low-cost workstations, whose prices start at less than £5,000. But besides being able to run technical packages, such as the AutoCAD design software, the machines also have substantial digital media capabilities enabling them to be used for transmitting video images.

One word starting to crop up more frequently in the engineering software area is Windows, the highly versatile PC operating system that permits easy manipulation of on-screen graphics developed by Microsoft. It provides an obvious migration path from the simpler DOS operating system – as well as from Microsoft – that has already effectively monopolised the industrial PC market.

Several companies are showing Windows products. Production Modeling Corporation of Europe will be introducing Pro-Model for Windows, an upgrade to its DOS-based Pro-Model manufacturing simulation system.

The company says the change greatly enhances ease of use and the variety of graphical output available. DesignCAD for Windows from PMS (Instruments) is a similar upgrade to the company's existing 2D DesignCAD for DOS product.

One consequence of the change is much more potential for customisation of the system by users. But in the background there are also the beginnings of a confrontation between the Unix operating system within which most workstation-based software systems currently run and Microsoft's recently launched Windows NT product, even more powerful than basic Windows.

"High-end" PCs running Windows NT provide comparable performance to "low-end" Unix workstations. One of the first products to exploit the situation is the Pro/Engineer parametric modelling system from Parametric Technology. The company will be showing Pro/Engineer running on a Compaq Deskpro "486" PC.

The establishment of Windows/Windows NT products in the engineering software field is likely to prove one of the fundamental driving forces for product development over the next few years.

Mike Farish is a freelance writer on business and technology issues in manufacturing industry.

Company profile: PARAMETRIC TECHNOLOGY

This is the one to match

WHEN A company boosts sales from $11m in 1989 to nearly $87m last year, and roughly doubles its net profits every year, it is easy to see why it captures many of the superlatives regularly dished out by observers of its industry and financial analysts.

Such is the case with Massachusetts-based Parametric Technology, which over the past five years has emerged from nowhere to claim leadership in the mechanical design automation industry – and has become one of the darlings of Wall Street in the process.

In July, the company reported a 101 per cent surge in third-quarter earnings to $11.4m. Its market capitalisation exceeds $2bn and Mr Steven Walske, president and chief executive, says: "We continue to be the driving force in the market place for high-end mechanical design automation software products."

Independent observers enthuse similarly. The Cad Report, an industry newsletter, says Parametric's Pro/Engineer family of software products has become the most attractive system for three-dimensional mechanical design, and adds that the company's breathtaking growth should not surprise anyone.

The object of all this adulation is a company formed in 1985 by Mr Sam Geisberg. Recognising earlier than many how things were going in the Cadcam industry, Mr Geisberg wanted to develop a new Cadcam system that was not only technologically innovative in itself but also not restricted to any particular hardware.

The first Pro/Engineer was launched in 1988 and is now a family of about 27 software modules ranging from conceptual design to manufacturing. The underlying business strategy is to concentrate on mechanical design-through-manufacturing, and to set the pace through "technological leadership, hardware independence, aggressive price/performance, worldwide distribution and extensive customer support".

In practice, this means that Parametric sells only software, which runs on all the major Unix platforms including the latest releases from Sun, Hewlett-Packard, Silicon Graphics, DEC and IBM. At the CIM '93 show at Birmingham's National Exhibition Centre, it will be running Pro/Engineer on a Compaq 486-based Deskpro 66M under Windows NT, Microsoft's new 32-bit operating system.

It also means regular product enhancements – two big releases each year compared with one for many of its rivals. Release 11 of Pro/Engineer was made this May, and introduced two new software products: Pro/Dieface, which provides stamping designers with the tools to define complex components used in the manufacture of car body panels and other "deep drawn" products; and Pro/PDM (Parametric Design Manager), which manages the development and support of large-scale parametric designs and traditional engineering data.

And then there is the core product itself, Pro/Engineer. This uses a unique, single data structure which, says Parametric, improves interaction among engineers by allowing all members of the product development team to work on the design simultaneously. It also uses "parametric design," which means that when a dimension such as a diameter is changed, the software works out on its own how much to change the rest of the product accordingly.

According to The Cad Report, other advantages of Pro/Engineer are that it is visually attractive, has menu terms that mean something to engineers and is reasonably priced.

Competitors really began to take notice of Parametric last year when it announced that Caterpillar, the world's largest construction equipment group, had ordered 2,000 "seats" – the term used in the industry for copies of the software – in what is believed to be the biggest single order ever received by a Cadcam company. Cummins Engine also said it would progressively standardise on Pro/Engineer, and Toyota and Ford placed significant orders.

To make the most of its opportunities, Parametric is now aggressively expanding outside the US. Its international sales grew by 80 per cent last year.

In Europe, it has rapidly expanded its presence in the past two years, and sales more than doubled last year following heavy investments to broaden the company's direct sales and support operations throughout the continent.

In an interview earlier this year, Mr Louis Volpe, Parametric's senior vice-president for marketing and operations, said the company was targeting electronics packaging and automotive companies in Europe. It hoped to use the new Pro/Dieface software as a way to expand its presence in the automotive industry.

But Mr Volpe also made clear that Parametric attaches a high priority to Asia. Over the next 10 years, it wants to achieve a broad balance between its US, European and Asian turnover.

Independent distribution channels have been established throughout the region and a wholly-owned business subsidiary established in Japan, seen as the biggest market opportunity in Asia. Parametric is keen to exploit the Japanese move from two-dimensional to three-dimensional mechanical design, where – surprisingly, perhaps – the country lags behind developments in Europe and the US.

Some of Parametric's recent orders bear witness to the developing global strategy. In August, it announced a significant order from British Aerospace Defence for seats of Pro/Engineer for the Lostock, Lancs, and Stevenage, Herts sites of the UK company's Dynamics Division.

Earlier in the year, it won an order for more than 100 seats from Groupe Schneider, the French industrial and electrical products group. It also picked up one of the largest Cadcam contracts placed by an Indian company – from Tata Engineering and Locomotive (Telco), which makes cars, trucks and construction equipment.

Inevitably, Parametric's surge raises questions about how long the growth can continue. Parametric does not have the diversity of several competitors whose products go a long way beyond mechanical design-to-manufacturing. Thus, it could be said to have all its eggs in one basket.

However, according to Mr Walske and Mr Geisberg in the company's 1992 annual report: "The size of our market opportunity remains great. There are an estimated 3m to 5m engineers, designers and drafting professionals worldwide who could benefit from mechanical design automation software such as Pro/Engineer."

The hype surrounding Parametric has set it up as the one to match in its chosen market. But, according to Engineering Automation Report last October, the company is not "a short-term phenomenon, destined to flame out as soon as the competition gets its act together. This company is here for the long haul."

That is backed up by Mr Jeffry Canin, an analyst at Salomon Brothers. "I am very confident that Parametric will grow faster than the mechanical design automation market as a whole," he says.

But it looks as if further doubling of net earnings could be a tall order, as Mr Canin adds a cautionary note: the $1.8bn MDA market worldwide is growing only at 11-12 per cent a year, and is maturing. Earnings per share in the year just ended will virtually have doubled, he says, but the rise in 1993-94 could be a mere 43 per cent.

Andrew Baxter

Case study: FORD ELECTRONICS IN SPAIN

Data is in the right bucket

SUCCESS IN manufacturing, as in most walks of life, is based on decision-making. But correct decisions can only be taken if employees are in full possession of information.

If those employees can be "empowered" with the information, the chances of getting the entire production process right, from receiving components from suppliers to sending high-quality finished products to customers on time, is increased.

This is the thinking behind an enterprise-wide IT strategy at Ford Electronics Division in Cadiz, Spain, which is part of a worldwide division providing components for Ford Motor, its parent company and other customers.

The plant was opened three years ago, but in developing its IT strategy managers took the unusual step of involving potential users in assessing what their present and future needs would be – rather than simply leaving everything to be decided and implemented by a systems department.

What has emerged is something that is still very rare in manufacturing – and, until recently, frustratingly hard to achieve, especially for those who believed everything their IT vendors were telling them in the mid-1980s.

The plant uses an IT system that integrates every element of the manufacturing, warehouse, finance, business, plant management and personnel. All employees have access to on-line real-time information. Every piece of hardware – whether it be a personal computer, printer of fax machine – and every application is linked via voice or data networks and all information is provided to the user with a "graphical user interface".

The core of the system is a relational database supplied by Oracle, the California-based company which is among the world's top three software suppliers. Employees share common information which they use in different ways, but most importantly they can access the information in the form they require.

The problem with many traditional database systems is that they are "data-rich but information poor," according to Mr Chris Stephenson, manufacturing applications manager at Oracle UK. The Oracle system works as if the user is picking up a bucket of data and putting it into his bucket, for example a PC, after which he can do what he likes with it.

As the Cadiz plant is part of a worldwide corporation, its system is linked to Ford Electronics Division's database and information is downloaded and uploaded as required. Most of the data, though, is generated on the plant floor and the key is to be able to get hold of it quickly and flexibly.

For example, all incoming components from suppliers are barcoded, and the information is downloaded into the database. The system can be programmed to alert operators if a part needs to be checked or if it can proceed to the next stage. The progress of the component through the plant can be traced so that, if the ultimate customer complains about the finished product, all the information on the original suppliers is maintained in the database.

The availability of real-time information allows an operator – working, perhaps, on the night-shift when there are no computer engineers around – to assess what to do if a part is in short supply. The database will tell him whether the part is in, and whether it has been allocated to a department that does not need it urgently.

High-quality information on production bottlenecks can be made instantaneously available, and data, for example on the top five problems on the plant floor, readily obtained – even down to the performance of individual robots.

Even the biggest companies are going for off-the-shelf packages such as Oracle's, which can be adapted to suit most companies' needs without changing the core software

All this represents "tangible business savings," says Mr Madjid Homayounfal, information systems manager at Ford Electronics' Enfield plant in the UK, where planning for the installation of a similar system has been completed.

Although the system at Cadiz is in effect one database, it is in reality a series of integrated applications. The data from the shopfloor is supported by the Oracle Manufacturing software, then there is Oracle Financial for the accountants and Oracle Personnel.

Consequently, "soft issues" such as training and employees' skills are captured on computer in much the same way as the "nitty-gritty" data from the production process. A supervisor wanting to know what skills are available from his work group for a particular project can call them up quickly from the database without having to wait for a personnel department to provide it.

This is what is meant by empowerment, although it is clearly an area where companies have to be diplomatic, says Mr Homayounfal. But worries about such databases can be allayed by making employees feel part of the whole process, which could be used to track people's education and training achievements.

Ford is not saying how much money it will save from the Cadiz database but is clearly impressed by the business benefits, in terms of both time and money saved.

The benefits of such a database could multiply if installed across several plants in a global business. It would be relatively simple to produce, in a matter of minutes, a list of the five most common production or quality problems around the group.

Consequently, big customers such as Ford are very important for Oracle, which had sales of $1.5bn last year and manufacturing customers ranging from Asea Brown Boveri to Beijing No 1 Machine Tool Plant.

But the attitude of companies towards making such an investment are pretty hard-nosed. "The typical payback would be 12-18 months," says Mr Stephenson, because "things change so fast." No company could commit itself to a database that took five years to pay for itself in the current business environment.

This underlines why even the biggest companies are going for off-the-shelf packages such as Oracle's, which can be adapted to suit most companies' needs without changing the core software.

Andrew Baxter

Company profile: EDS UNIGRAPHICS

Where modesty is out of place

IN 1989, the Indian company Bharat Forge, which makes automotive components ranging from axle beams to steering knuckles, decided it wanted to introduce Cadcam (computer aided design and manufacturing) software to support its die design and manufacturing activities.

Now, having taken the plunge into Cadcam, Bharat is claiming to be among the world's five most technically advanced commercial forge shops. It is modelling the dies on screen and then machining them directly, using numerical control programs generated by the Cam process. Bharat has reduced its tooling development time from six to two months, and has improved the speed and accuracy of its machining.

When Bharat selected its Cadcam system the range of choices available in India was limited. But it is a nice accolade for its supplier, EDS Unigraphics, that Bharat says it would still opt for it even though several more Cadcam packages are now available.

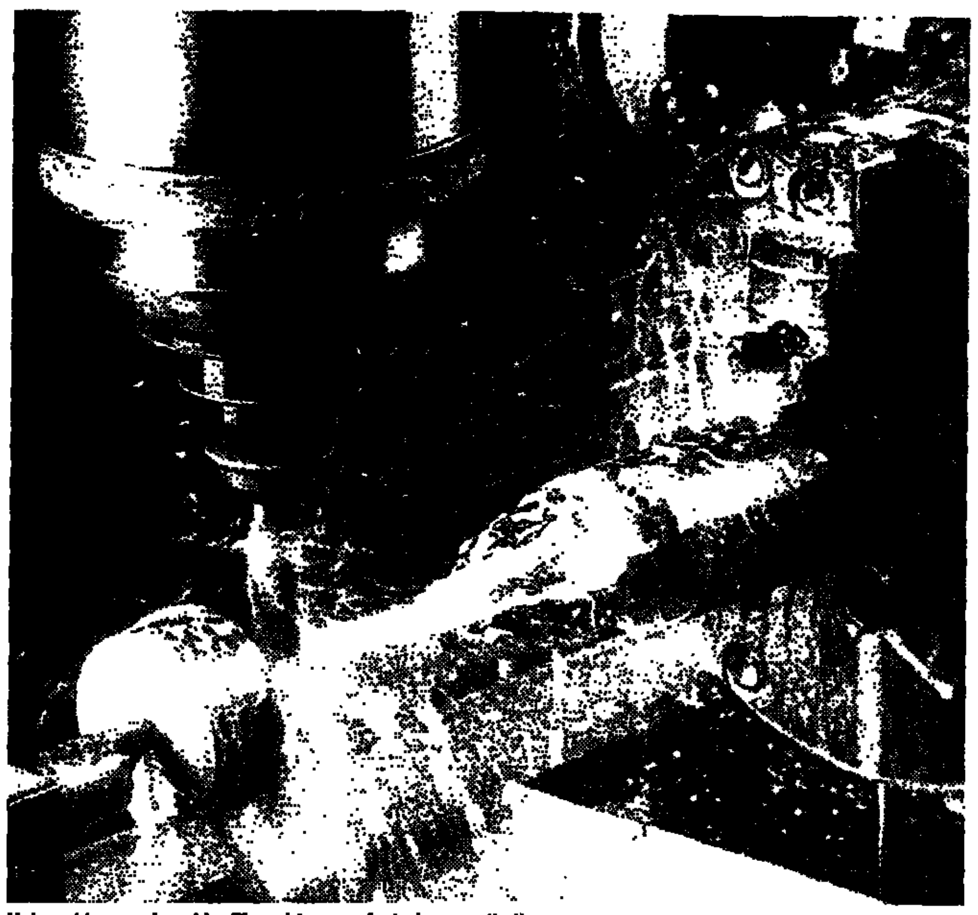
Apart from being an encouraging sign of how the importance of Cadcam is being increasingly recognised in the industrialising countries, the story is also an illustration of EDS Unigraphics' global strength.

There is no place for modesty in the market for selling computers and software to industry, and EDS Unigraphics says it "provides the most comprehensive Cadcam/cae (computer-aided engineering) offerings available and leads the market in the breadth of its related products and services.

The Unigraphics system is a major manufacturing tool for aerospace and automotive industries and is used in producing a wide range of industrial equipment and consumer goods.

Along with many Cadcam companies, it has had a chequered past, but the key recent event came in 1991 when the EDS subsidiary of General Motors bought McDonnell Douglas Systems Integration in the US and the Cadcam side of McDonnell Douglas Information Systems outside the US, acquiring in the process the Unigraphics product range.

Alberto Tomba, the Italian skiing champion, with Rossignol skis that were designed with the use of Unigraphics



Unigraphics employed by Biomet in manufacturing prosthetics

Mr Jim Duncan, general manager for EDS Unigraphics in Europe, says EDS knew a lot about Unigraphics because of the participation of McDonnell Douglas in GM's C4 project, an internal engineering and design initiative. EDS had also been successful in industries such as banking, insurance and health, but less so in manufacturing, which was and remains the great strength of Unigraphics.

Further reorganisation followed, and research spending has risen sharply under the new owners. According to a recent study of the company by Mr Dave Weisberg in Engineering Automation Report, initial fears about the merger have proved unfounded.

One concern was that Unigraphics would focus on the needs of GM, giving a lower priority to other customers. In fact, says Mr Weisberg, current product development and business activities clearly indicate that EDS Unigraphics are quite interested in pursuing traditional Cadcam markets.

EDS has also avoided one of the big mistakes that can be made in acquiring a high-tech company, and has not made large-scale personnel replacements or changed the personality of the company. Mr John Mazzola is still president and most of the key Unigraphics people are still in place.

The key strategic development since the takeover has been the repositioning of the company to offer a much broader range of services than is the norm for a Cadcam vendor. The aim is to satisfy customers' current need to view product modelling via Cad as an one element of the entire business process rather than simply a means to raise productivity in the design department.

Apart from product modelling, therefore, the company has three other closely inter-related areas of activity. Because concurrent engineering requires unrestricted data sharing and systems that can operate with each other, EDS Unigraphics produces a software tool called Information Manager, which manages product and process definition data throughout the product life cycle, and makes sure information reaches the right people at the right time.

It also offers the EDS advanced computing and communications technology to make the product modelling and product data management more valuable. Finally, there is a collaborative approach to enable companies to develop their products and processes, including expert help on process engineering and productivity.

Overall, EDS Unigraphics rather grandly calls this its Unique Perspective on Productivity. The aim, says Mr Duncan, is for the company to secure its future as one of perhaps only four or five global players in the Cadcam market.

And that means being global in a geographic sense too, while recognising the differences between industries and countries and avoiding the dangers of becoming over-centralised.

Jim Duncan, general manager of EDS Unigraphics in Europe

"So much of our business comes from multinationals," says Mr Duncan. "Unless a vendor can support the customers in all the countries where it is operating, it won't stay in the premier league of suppliers."

Mr Duncan says EDS Unigraphics is experiencing a healthy year in a difficult business environment. In a European market forecast to grow by 4 per cent this year, the value of orders received in the first half of the year grew by more than 10 per cent, compared with the same period of 1992.

"The business has benefited enormously from the new global organisation," he says.

But the company is happy to admit that even with the muscle of EDS, and, ultimately, GM behind it, it cannot do everything itself. Accordingly, it has formed several strategic partnerships with smaller companies which Mr Duncan calls "best in class" companies, such as ICAD with its Knowledge-based Engineering software.

Some of these relationships are acquiring new importance this year because of the launch by EDS Unigraphics of V10 – the 10th version of its Unigraphics Cadcam software. This involves much more than the usual incremental improvements found in new versions of software and is the result, says the company, of constant probing for ways to help manufacturers bring products to market faster, more cost-effectively and with built-in quality.

Features include the ability to switch between different design processes, such as wire-frame, surfaces and 3D solids, and a new easy-to-use Motif-based user interface.

V10 was launched in May, and is the most important result so far of the increased R&D spending since EDS took over. Last month, in a significant development that was a response to the wishes of EDS Unigraphics customers, the company said that V10 is being "ported for," or made to run on, workstations made by Silicon Graphics, one of the leading 3D graphics workstation vendors.

On the near horizon for EDS Unigraphics is the full implementation of a concept called virtual product development, which is related to one of the current buzz-phrases in US corporate-speak, the "virtual" factory or corporation. This is the trend for companies to form ever-shifting relationships with other corporations without geographic barriers, getting a job or part of a job done wherever it can be done best and quickest, and cutting out the fixed cost of a heavy infrastructure.

Virtual product development is similar in that it means people from different companies and countries will work concurrently, and even on an ad hoc basis, to design and manufacture products.

The key to the success of such an idea is a communication network which can distribute information about the product electronically – which is why EDS Unigraphics believes there is so much more to Cadcam than just throwing out the drawing tables.

Andrew Baxter

Where would software have most effect in the textile industry?

Areas ripe for technology

CLOTHING and textiles are industries unlike those that make canned soup or assemble motor cars.

Two hundred years ago, they were the first to be industrialised. They still have their roots in craft industries and parts of them remain to this day highly labour-intensive.

Most important of all, they are vertically integrated. Europe's biggest textile company, Coats Viyella, for example, makes thread, cloth and garments and retails them too. It is as if Ford owned British Steel and Shell's service stations.

Perhaps not surprisingly, then, the challenge confronting textiles and clothing executives is as much where to computerise as how to do it. In the 1990s, they have the possibility of introducing computers into just about any link in the manufacturing chain.

Computers are even used at the very start of the process. More than a year before a cotton shirt is bought by a consumer, a computer model of plant development helps US cotton growers maximise yield and quality.

After harvesting, the cotton is then sent to depots where a software package, developed by a company owned by the cotton growers, helps to choose a suitable blend of raw fibres. By selecting combinations of fibre characteristics, such as thickness and length, the qualities of the eventual yarn can be determined.

The software is linked to cotton mill storage areas. It directs the placement on the warehouse floor of different cotton bales. The automatic machinery that picks up the bales in a preprogrammed sequence and takes them to be blended into the raw material for yarn making.

As well as helping determine the feel of the yarn and cloth to be made, the software helps determine its strength, a critical element in setting the speed of spinning and weaving machines.

The idea may be extended beyond cotton, if a European Community-funded project now under way comes to fruition. It aims to allow clothing designers to specify the characteristics of the cloth and ask a computer to tell them the best way of making it.

The clothing designer will be offered a range of routes to achieve a given fabric performance without recourse to the expense and time involved in selecting fibre, yarns, weaving finishing and testing samples.

As well as cutting design costs, it could simplify the production cycle, improve quality – important for developed countries in competition with low labour-cost rivals – and even help introduce new fabric ideas and clothing constructions.

In the long chain of production involved in making clothes, the stage after yarn selection is weaving or knitting. Like other manufacturing processes, they have already seen the introduction of computers for monitoring and process control.

But several areas remain that are ripe for the introduction of the latest high speed computer technologies.

Once the cloth is made, it must be inspected. This is still usually done by a worker looking at the cloth as it rolls by. Even in the latest factories, such as Toray's polyester plant in Mansfield, Nottinghamshire, fabric inspection needs the human eye. Some clothing makers duplicate the effort and employ staff to scan the rolls of cloth looking for imperfections.

At one of Europe's largest lace manufacturers, designers have forsaken pen and ink for the power of computer-aided design

UK consultancy Era Technology is working on an automatic inspection system that would automatically alert machine operators to the presence of defects. It hopes to extend the principle to the monitoring of leather, paper, printing and footwear sectors.

This kind of procedure, as with most image-based analysis, relies on high-powered electronics. The ERA systems uses parallel processing integrated circuits in an array of TMS320C40 digital signal processing chips. This in turn feeds information into Transputer chips for analysis.

Cloth design is also being done increasingly on computers. At Nottingham-based Sherwood Group, one of Europe's largest lace manufacturers, for example, designers have forsaken pen and ink for the power of computer-aided design (CAD).

In the US, CAD is being used to create fabric print designs. It goes a stage further than Sherwood's system because it links the design function to manufacturing. One system, called the Apparel and Accessory Manufacturing Pipeline (AAMP), integrates the cloth-cutting, printing and stitching processes. The $1m package allows rapid prototyping and short production runs.

It is a short step from CAD to using computers to reduce wastage of cloth when it is cut into shapes ready to be stitched into garments.

Cloth-cutting has long been mechanically assisted. Traditionally, the cutter follows lines drawn by hand on the cloth itself. UK-based clothes manufacturer Burberry this year introduced a simple IBM PC-based software package that allows the shapes of the cloth pieces to be fitted together jigsaw-like to make the best use of the width of cloth available. The PC outputs the design onto a wide carriage printer and the outlines are used as stencils by the cutter.

The next logical stage, already in use by some clothing manufacturers, is to link such a CAD system directly to cloth-cutting machines.

This is a technique favoured by manufacturers in Germany as part of "outward processing", a system of manufacture that minimises the labour content within a high wage-cost country. After automatic cutting, cloth pieces are shipped to lower wage cost countries for assembly into garments.

Garment-making itself is still resistant to the introduction of computers: clothes manufacturers still find it more productive to shift production to lower wage-cost regions than invest in the possibility of automated garment assembly.

Nevertheless, efficiency can be improved through computer links with garment retailers.

A typical system is an "integrated supply chain product" made by UK company Prologic. This software package links garment orders with information on supply bottlenecks in, for example, the schedule of cloth delivery.

For example, if a retail chain orders a range of clothes, the salesman keys in that information. The computer responds by providing possible supply dates. If a higher priority is given to the new order, the software calculates what the knock-on effect will be on other orders that need the same cloth.

Prologic's customers include such companies as Aquascutum and Paul Smith.

Computer-literate textiles and clothing executives face a dazzling choice of ways to introduce computer technology into their companies' manufacturing processes. But unlike office managers, it is not a question of which accounts or spreadsheet package to buy. Instead they need to examine their production process and consider where, precisely, computers would make the most difference.

Daniel Green

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John Griffiths looks at changes in attitudes in the motor industry

Development times cut

SINCE THE late 1980s, the motor industry has in effect abandoned the notion that the wholesale application of computer-controlled automation and robotics might be the best way for the west to manufacture cars cost-effectively against Japan's hard-working labour forces and lower social overheads.

For a period, what was then Europe's largest automotive group, Fiat, did indeed believe that such an approach would provide the definitive answer to the Japanese.

Out of that conviction grew Fiat's massive Cassino plant, not far from Naples, where Tipo and Uno models have been built with a degree of automation unmatched elsewhere before or since.

An army of automated transfer lines and Comau robots – built by Fiat's own robotics subsidiary – stamps and assembles pressings carried on integrated computer-guided transport systems, paints bodies, assembles the car interior from modules – and even fills the tank at the end of the production process with the correct grade of fuel.

But just as Volkswagen found with its venture into extreme automation, "Hall 54" at Wolfsburg, Cassino has proved too inflexible.

Manufacturers are having to diversify their product ranges to cater to the whims of ever more demanding consumers, and for the same reason car life cycles have had to shorten.

Not only did Cassino, in the end, fail to yield the hoped-for productivity, its rigidities have looked increasingly out of place in an industry ever more concerned with the human resources aspects of Japanese-inspired "lean" manufacturing and how to utilise simultaneous engineering principles to bring products more quickly and competitively to market.

Fiat, too, has seen the flaws in the Cassino concept.

Melfi, its new plant in the south of Italy to produce the Punto small car on which Fiat's future heavily depends, exemplifies Fiat's new theology of the "integrated factory", which it has begun to test out selectively at its plants in the past 18 months.

"Cassino was focused on 'hard' issues, Melfi is about 'soft' issues," says Mr Paolo Cantarella, Fiat Auto's chief executive.

"The integration of man and machine is different at Melfi. It is about how to organise activities, to involve people, to train them and keep them motivated to the job, rather than how to put the wheel on the car. We know how to do that," he adds.

But they will be organising these activities with a sophisticated array of computers. For computer systems have now permeated every aspect of the motor industry, from first concept to delivery of vehicle to dealer and the flow of service and repair parts.

This applies from the largest companies such as General Motors and Ford to smaller and medium-size companies including the UK's Rover group.

Rover has spent £200m at its Cowley complex in Oxfordshire to create what it claims to be one of Europe's most compact and flexible car plants.

Among Rover's prime concerns has been to introduce the team working, multi-skilling, flexibility, *kaizen* (continuous improvement) and cultural attitudes among its workforce that are now recognised as lying at the heart of Japanese "lean" manufacturing success in the motor industry.

But to this workforce, the four inter-related systems which control the main plant processes are servant, not master. The build control system (BCS), itself triggered by computer-generated dealer orders, tracks bodyshells through all stages of manufacture by camera-reading bar-coded tags.

It allows construction, manufacturing, project planning and other divisions to be closely involved with a model programme at the earliest design phase

The painted body store management system releases the shells onto the assembly line according to batch requirements. A third system controls the movement of components within the distribution centre and on-site storage areas to provide just-in-time line deliveries. A component identification system ensures correct fitment of components which look alike but which are specific to a particular vehicle application.

All of these systems work in "open" mode, which allows information on them to be accessed by any employee. The control computers are also linked to a messaging system that can be used to give essential information to employees throughout the facility.

It is in the visualisation of new design possibilities, however, that the motor industry has made some of its most valuable advances with computers.

Ford, for example, is rapidly becoming heavily reliant on its Design Computer System, with which it has been working since 1990.

The most important DCS underlying function, as with most computer technology in the motor industry, is significantly to reduce product development times. It allows construction, manufacturing, project planning and other divisions to be closely involved with a model programme at the earliest design phase.

The DCS for car body design was developed at Ford's Merkenich research and development centre at Cologne; that for interior design in Ford's similar centre at Dunton in the UK, with which Merkenich is connected directly.

Together, they allow the concept designer to produce three-dimensional designs on-screen which provide both a mathematical and geometrical computational basis for technical designers. Of major importance in the process is the generation of life-size, photographic-quality images which can also be evaluated subjectively.

The system had also to allow early access to design information for manufacturing purposes, and to provide for the instant display of corrections and alternatives in order to accelerate decision-making.

Thus, separate paintbox, high-resolution video and three-dimensional computer modelling systems were integrated to form DCS.

The designer's electronic pen produces a photographic quality drawing on screen, with the concept vehicle's shape colour and proportions open to almost instant change – for example during a presentation.

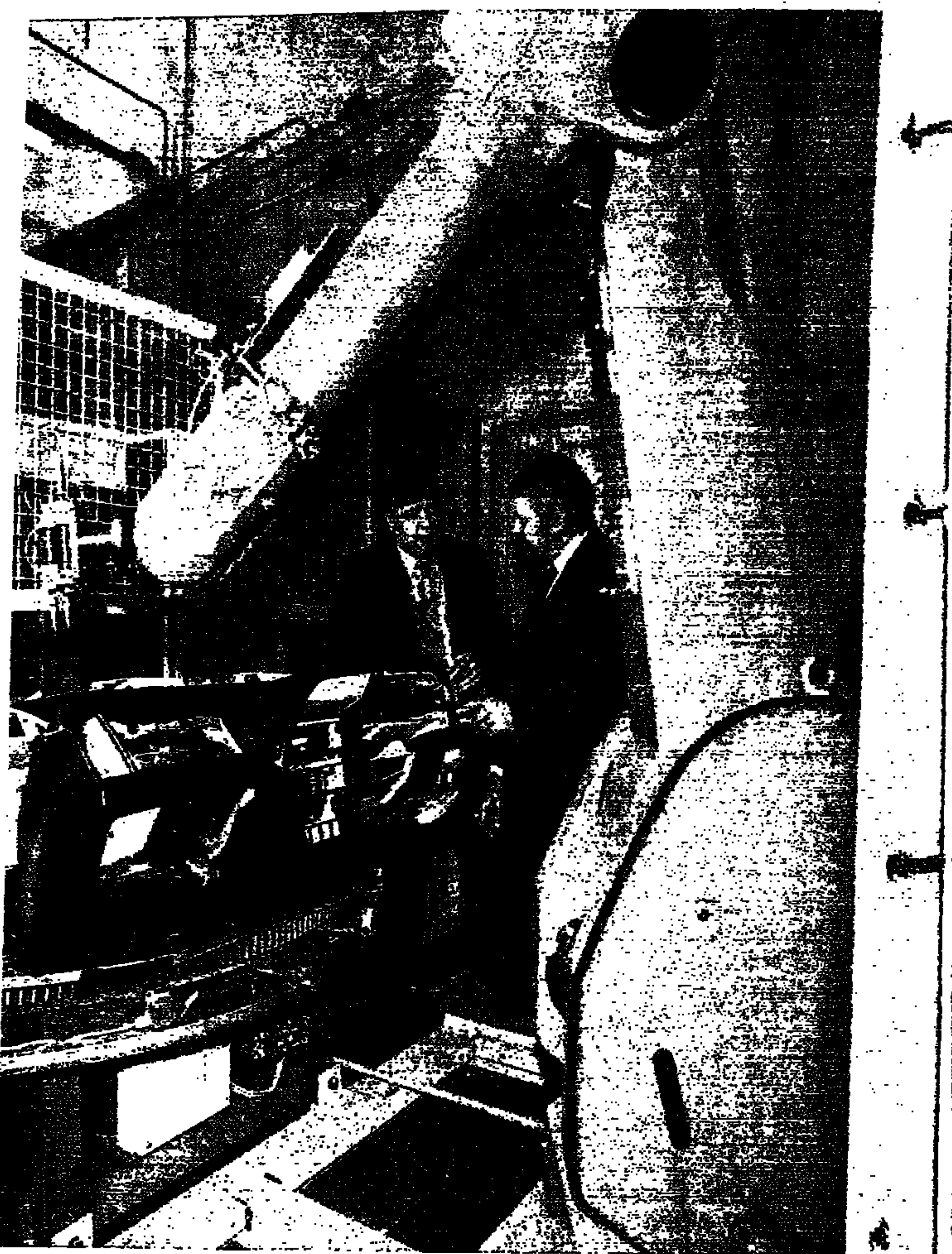
Crucially, the system is also capable of memorising a sequence of such "drawings" and turning them into a rotatable, "real life" presentation of the proposed vehicle, allowing judgments to be made of its styling and proportions previously possible only by making time-absorbing mock-ups.

This is done with the further aid of CDRS (conceptual design rendering system), creating a three-dimensional model of the vehicle body, all the data for which is available for computer aided manufacturing decisions.

Ford executives at Merkenich calculate that the system reduces the "clay model" phase by three months because most of the models previously made for visual evaluation are no longer necessary. Models of both the vehicle exterior and interior can be machines directly from the database in a variety of materials.

Even the computer-aided engineering processes by which the vehicle's structural integrity is analysed can be completed at a far earlier stage than previously.

Before DCS' introduction, Ford designers generated the initial two-dimensional design of a future car on paper. This would be amended as felt necessary by approval committees and only then used as the basis for an initial clay model.



Robotised manufacture of components for the new Peugeot 306 is controlled by the Data 3 just-in-time computerised manufacturing system from Hoskyns Application Products

■ AEROSPACE COMPONENTS

A landmark in technology

THE FOUR wheels on the main landing gear of the new Airbus A330/340 aircraft are fastened to the leg of the undercarriage by a highly-stressed "bogey beam" containing numerous complex curved surfaces.

For Airbus it represents an effective lightweight solution to the task of supporting the landing force of a 257-tonne aircraft. For Dowty Aerospace Landing Gear of Gloucester, which supplies the beam as part of a £300m contract for the whole A330/340 landing gear, the beam represents a landmark in its development and use of advanced design and manufacturing technology.

According to Mr Chris Morgan of Dowty, who played a leading role in the development project, the beam was "the first major component" that the company has produced purely electronically, without any physical mock-ups during the whole programme.

As such, the beam represents a key element in the engineering strategies that Dowty and other aerospace companies are implementing in pursuit of their business aims.

At Dowty, Mr Morgan is engineering group leader for new projects and is in charge of developing the company's use of computers in a change programme that got under way two years ago.

The aims are to introduce concurrent engineering, in other words the simultaneous execution of previously sequential tasks, as a normal working practice and support the development of advanced, low-weight landing gear designs.

An essential requirement, he says, is to make 3D computer modelling the standard way of carrying out design work and to integrate design software with the various specialist analysis packages, such as finite element programs, used by the company.

The company is therefore phasing out use of its old Graftek CAD software and stepping up use of the Catia software marketed by IBM. It has also invested £250,000 in new workstation hardware – IBM Risc and Hewlett-Packard machines – so that all its design and analysis software now runs in a uniform Unix-operating environment and data can be transferred between different programs easily and quickly.

Such internal data transfers use the IGES (Initial Graphics Exchange Specification) translation software, though in a version "flavoured" slightly to Dowty's own needs. Consequently, says Mr Morgan, computerised finite element analysis is now an everyday tool rather than an occasional resource for particularly complex tasks.

Modern workstation hardware also runs the Command CNC (Computer Numerical Control) software package that now drives shopfloor machine tools. The company's main manufacturing-related investment, however, has been in a new £45m plant in Canada where other parts of the A330/340 landing gear are made.

Elsewhere in the industry similar strategies and achievements are in evidence. Rolls-Royce Aeroengines in Derby has spent £10m over the last four years installing some 700 Unix workstation platforms – this time Sun and Silicon Graphics machines.

The aim, as Mr Derek Gale, head of engineering systems, makes clear, is again "integration", with the objective of cutting total engine development times by one third. Nevertheless, he says that the company has had to trim back investment in the recession and that the policy has been one of "minimum" necessary investment.

Every bit about "every engine going out of the door" will be in a single database

Ultimately, the company wants all 4,000 of its engineering staff to have their own terminals, though some of them will be able to make do with PCs.

An equally significant long-term goal is the introduction of full engineering data management, in effect the integration of all business and technical information. This will enable the company to have every bit of information about "every engine going out of the door" in a single database.

One difference between Rolls-Royce and Dowty, however, is the former's much more guarded attitude towards standardised data transfer by means such as IGES. Rolls-Royce prefers to use a series of customised links to integrate its design and analysis programs.

This lack of uniformity is also evident in the area of design data exchange between aircraft and engine builders and both their customers and component suppliers. Unlike the car industry where computerised data exchange is virtually the norm, there has been little concerted effort in this direction.

Instead, there is a mix of data transfer between identical CAD systems, dissimilar systems using IGES and a still heavy reliance on the use of paper drawings. A major reason is the establishment of *de facto* communications standards for specific areas of aircraft based on particular proprietary CAD systems.

Dowty's adoption of Catia, for instance, was prompted by the fact that the software was already widely used for landing gear design.

Unsurprisingly, the techniques now being pioneered in the civil aircraft industry are also being thoroughly exploited in the military world.

The latest version of the Harrier jump-jet, the T10, due to make its maiden flight very shortly, has been developed jointly by British Aerospace and McDonnell Douglas in the US. BAe has had responsibility for the complete rear half of the fuselage and, according to Mr Gary Smith, group leader for CAD applications for the company's Military Aircraft Division at Farnborough, modelled the structure completely in 3D computer form.

That enabled the design team to calculate the lengths of cable and wire running through the section "with 99.9 per cent accuracy".

Previously, it would have been necessary to build a full-size wooden mock-up or even buy in a real fuselage section. BAe would adopt the same approach, Mr Smith adds, even for a completely new aircraft development project.

At the manufacturing level the use of computer-controlled machine tools fed with information directly from the design database is now standard technology. The real differentiating factor between companies is how effectively they organise their use of the technology and link it to streamlined working practices.

Short Brothers in Belfast, for instance, which is now making major structural components for several customers including Boeing, is currently three-quarters of the way through a £200m investment programme that will completely modernise all its production plant.

It is also using a software system called Matrix, developed jointly with AT&T Istel, that helps maximise the utilisation of individual pieces of equipment.

Mr Russell MacFadden, manufacturing engineering director for aircraft, says the investment has been linked with a reorganisation of the company into a series of "mini-businesses" in which semi-autonomous manufacturing units act as suppliers of business units, concentrating on the needs of particular customers.

All development projects are now carried out by multi-disciplinary "design-build teams" and the company has invested more than £5m in training to support the necessary "culture change". In parallel, it has reduced the number of its component suppliers from around 100 to 14. Future developments will see suppliers becoming full members of project teams.

Mike Farish